THE ALPINE GUIDE

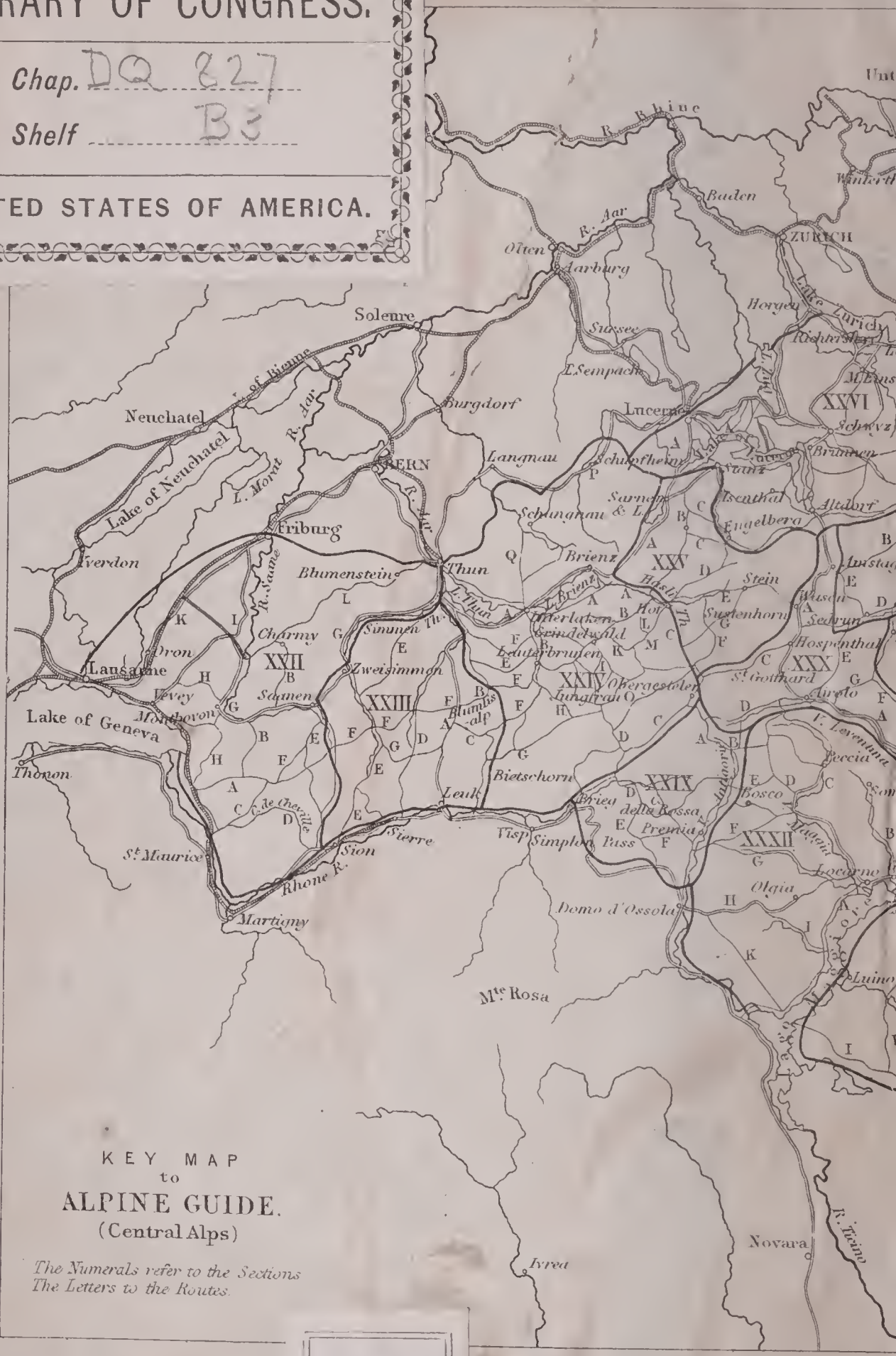
CENTRAL ALPS.

LIBRARY OF CONGRESS.

Chap. DQ 827

Shelf B3

UNITED STATES OF AMERICA.

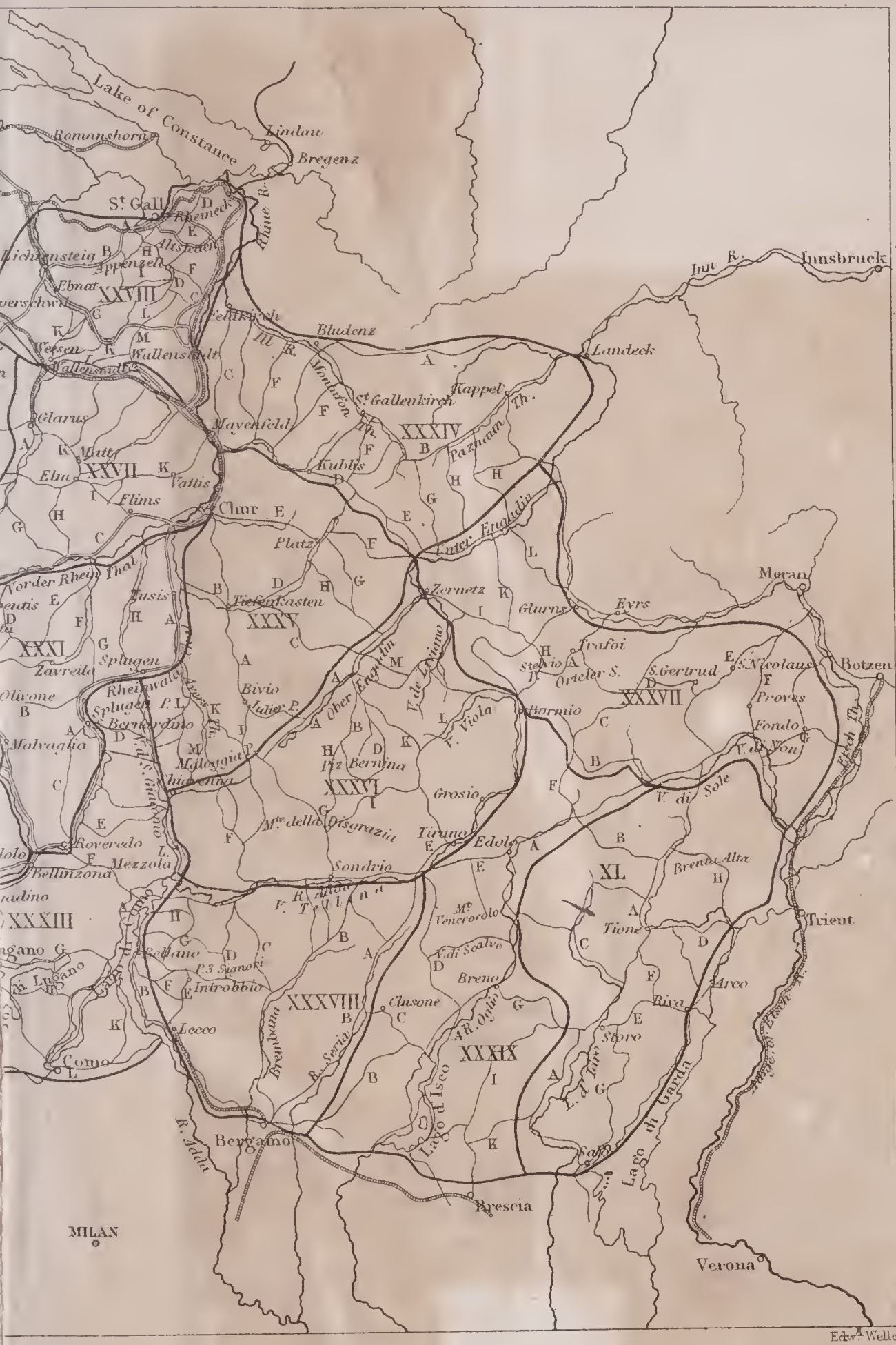


KEY MAP
to
ALPINE GUIDE.
(Central Alps)

The Numerals refer to the Sections
The Letters to the Routes.

Chap. 2
213

London



Edw.d Weller.

gman & Co.

INFORMATION respecting the CENTRAL ALPS, for use in a future edition, and contributions to the remaining part of this work, the EASTERN ALPS, will be thankfully received by the Editor. It is requested that they may be authenticated by the name and address of the writer, and directed to the care of Messrs. LONGMAN & Co., 39 Paternoster Row, London, E.C.

The Editor takes this opportunity for offering his thanks to numerous contributors from whom he has received valuable information during the last three years, but to whom at the time he was unable to tender his acknowledgments.

MAP OF THE CENTRAL ALPS

including

SWITZERLAND,

LOMBARDY,

and the

WESTERN TYROL.

English Miles

London Longman & Co

Edwd Weller, F.R.G.S.

THE CENTRAL ALPS:

INCLUDING THE BERNESE
OBERLAND, AND ALL SWITZERLAND EXCEPTING
THE NEIGHBOURHOOD OF MONTE ROSA AND THE GREAT ST. BERNARD;
WITH LOMBARDY, AND THE ADJOINING
PORTION OF TYROL.

BEING THE SECOND PART OF THE ALPINE GUIDE.

BY

JOHN BALL, F.R.S. M.R.I.A. F.L.S. &c.

LATE PRESIDENT OF THE ALPINE CLUB.

2/
2130.

LIBRARY OF CONGRESS,
CITY OF WASHINGTON.

NEW EDITION.

LONDON:
LONGMANS, GREEN, AND CO.
1873.

LONDON: PRINTED BY
SPOTTISWOODE AND CO., NEW-STREET SQUARE
AND PARLIAMENT STREET

DQ827
.B3

CONTENTS.

PAGE

Authorities quoted xii
Preliminary Notes to the Central Alps xiii
Abbreviations and Explanations xx

CHAPTER VII.

BERNESE ALPS.

SECTION 22.

DIABLERETS DISTRICT.

Rte. A. Paris to Ormond Dessus, by Neuchâtel and Lausanne 4
„ B. Ormond Dessus to Château d'Oex and Bulle 11
„ C. Ormond Dessus to Bex 12
„ D. Bex to Sion, by the Col de Cheville 13
„ E. Sion to Saanen 15
„ F. Saanen to Ormond Dessus 18
„ G. Vevey to Thun, by Bulle and the Simmenthal 19
„ H. Château d'Oex to Vevey, on foot or horseback 22
„ I. Vevey to Fribourg and Berne 23
„ K. Lausanne to Berne 24
„ L. Bulle to Thun 26

SECTION 23.

GEMMI DISTRICT.

Rte. A. Paris to the Baths of Leuk, by Basle and Thun—Ascent of the Doldenhorn and Altels 28
„ B. Thun to Kandersteg, by the Kien Thal—Ascent of the Blümlis Alp . . 41
„ C. Kandersteg to Turtman, or Visp, by the Lötschen Pass 44
„ D. Baths of Leuk to Ferden or Kippel 46
„ E. Thun to Sierre, by Adelboden, and the Strubeleck 47
„ F. Thun to Sion, or Sierre, by the Rawyl Pass 48
„ G. Kandersteg to Lauenen, by Adelboden and An der Lenk 51
„ H. Baths of Leuk to An der Lenk—Ascent of the Wildstrubel . . . 52

SECTION 24.

BERNESE OBERLAND.

Rte. A. Thun to Interlaken and Meyringen, or Reichenbach 58
„ B. Meyringen to Interlaken, by Grindelwald and Lauterbrunnen . . . 65
„ C. Meyringen to Brieg, by the Grimsel 77
„ D. Viesch to Brieg, by the Æggischhorn and Bell Alp—Ascent of the Finsteraarhorn, Jungfrau, Aletschhorn 84

PAGE
Rte. E. Interlaken to Kandersteg 95
„ F. Lauterbrunnen to Kandersteg 96
„ G. Lauterbrunnen to Turtman, by the Lötschenthal—Ascent of the Bietschhorn 101
„ H. Lauterbrunnen to the Æggischhorn, by the Aletsch Glacier . . . 103
„ I. Grindelwald to the Æggischhorn—Ascent of the Mönch and Almerhorn . 106
„ K. Grindelwald to the Grimsel—Ascent of the Schreckhorn 113
„ L. Rosenlaui to Meyringen, by the Urbachthal and Weitsattel . . . 121
„ M. Meyringen to Grindelwald, by the Bergli Joch 123
„ N. Meyringen to the Grimsel, by the Gauli Pass 124
„ O. Grimsel to the Æggischhorn—Ascent of the Oberaarhorn 125
„ P. Berne to Lucerne, by the Entlebuch 127
„ Q. Interlaken to Burgdorf, by the Emmenthal 128

Section 25.

TITLIS DISTRICT.

Rte. A. Brienz or Meyringen to Lucerne, by the Brünig 130
„ B. Meyringen to Stanzstad, by the Melchthal 132
„ C. Sarnen to Engelberg 134
„ D. Meyringen to Engelberg—Ascent of the Titlis 134
„ E. Meyringen to Wasen, by the Susten Pass—Ascent of the Sustenhorn . 137
„ F. Mühlestalden to the Grimsel, by the Triftlimmi 139
„ G. Stein Alp to Guttannen, by the Steinlimmi and Furtwang Passes—Ascent of the Steinhaushorn and the Mährenhorn 142
„ H. Geschenen in the Valley of the Reuss to Meyringen, by the Geschenenthal . 143

CHAPTER VIII.

ALPS OF NORTH SWITZERLAND.

Section 26.

FOREST CANTONS.

Rte. A. Cologne to Altdorf, by Basle, Olten, and Lucerne 147
„ B. Basle to Lucerne, by Zurich—The Rigi 157
„ C. Lucerne to Schwyz and Brunnen 168
„ D. Schwyz to Richterschwyl, by Rothenthurm 171
„ E. Schwyz to Rapperschwyl, by Einsiedlen 172
„ F. Stanzstad to Altdorf, by Engelberg and the Surenen Pass 173
„ G. Stanz to Altdorf, by Isenthal 175
„ H. Stanz to Altdorf, by Beckenried and the Sonnenberg 176
„ I. Altdorf to Stachelberg, by the Klausen Pass 177
„ K. Schwyz to Glarus, by the Pragel Pass—Ascent of the Glärnisch . . 178
„ L. Muotta to Altdorf 181
„ M. Muotta to Stachelberg, by the Bisithal 182
„ N. Lachen to Schwyz or Glarus, by the Wäggi Thal 183

Section 27.

THE TÖDI DISTRICT.

		PAGE
Rte. A.	Zurich to Stachelberg, by Glarus—Ascent of the Tödi	185
„ B.	Stachelberg to Amsteg, by the Clariden Grat	197
„ C.	Basle to Dissentis, by Schaffhausen and Coire	202
„ D.	Dissentis to Andermatt, by the Oberalp Pass—Sources of the Vorder Rhein	217
„ E.	Dissentis to Amsteg—Kreuzli Pass	219
„ F.	Dissentis to Stachelberg, by the Sand Grat—Ascent of the Stockgron	220
„ G.	Ilanz, or Dissentis, to Stachelberg, by the Kisten Pass	222
„ H.	Ilanz to Elm, in the Sernft Thal, by the Panixer Pass	223
„ I.	Reichenau to Elm, by the Segnes Pass	224
„ K.	Glarus to Ragatz, by the Sernfthal and Sardona Glacier	225
„ L.	Glarus to Sargans, by the Sernfthal	228
„ M.	Elm to Stachelberg, by the Richetli Pass	229
„ N.	Reichenau to Ragatz, by the Kunkels Pass	229

Section 28.

SENTIS DISTRICT.

Rte. A.	Winterthur to Rorschach, by railway	231
„ B.	Uznach to St. Gall	233
„ C.	Rorschach to Sargans and Coire, by railway	234
„ D.	Rorschach to Trogen, Gais, Appenzell, and Weissbad	235
„ E.	St. Gall to Alstädten	238
„ F.	Weissbad to the Valley of the Rhine	239
„ G.	Wyl to Sargans, by the Toggenburg	240
„ H.	Nesslau to St. Gall, by Urnäsch	241
„ I.	Nesslau to Weissbad	242
„ K.	Nesslau to Wesen—Ascent of the Speer	242
„ L.	Wildhaus to Weissbad, by the Kray Alp	243
„ M.	Wildhaus to Wallenstadt, by the Churfirsten	244

CHAPTER IX.

LEOPONTINE ALPS.

Section 29.

FORMAZZA DISTRICT.

Rte. A.	Obergestelen to Domo d'Ossola, by the Gries Pass	247
„ B.	Formazza (Andermatten) to Airolo, by the Passo di San Giacomo	250
„ C.	Viesch to Formazza (Andermatten), by the Albrun Pass and Lebendu	251
„ D.	Viesch to Premia, by the Binnenthal	253
„ E.	Viesch to Isella, by the Ritter Pass	254
„ F.	Isella to Premia, by the Val Cherasca	256

Section 30.

ST. GOTHARD DISTRICT.

		PAGE
Rte. A.	Fluelen to Bellinzona, by the St. Gothard Pass	259
„ B.	Excursions from Amsteg—Ascents of the Great and Little Windgelle and the Bristenstock	269
„ C.	Hospenthal to Obergestelen, by the Furka Pass	271
„ D.	Obergestelen to Airolo, by the Nufenen Pass	273
„ E.	Airolo to Andermatt, by the Val Canaria	274
„ F.	Dissentis to Bellinzona, by the Lukmanier Pass	274
„ G.	Dissentis to Airolo, by the Passo dell' Uomo	278

Section 31.

ADULA DISTRICT.

Rte. A.	Coire to Bellinzona, by the Bernardino Pass—Via Mala	280
„ B.	Hinterrhein to Val Blegno—Ascent of Piz Valrhein	287
„ C.	San Bernardino to Roveredo, by Val Calanca	292
„ D.	Trons to Olivone, by the Greina Pass	292
„ E.	Ilanz to Olivone, by the Vrinthal	294
„ F.	Ilanz to Olivone, by the Zavreila Thal	298
„ G.	Ilanz to Hinterrhein, by the Valserberg	300
„ H.	Reichenau to Splügen, by Savien and the Löchliberg Pass	301

Section 32.

LOCARNO DISTRICT.

Rte. A.	Bellinzona to Arona, or Sesto Calende, by the Lago Maggiore	304
„ B.	Locarno to Faido, by Val Verzasca	308
„ C.	Locarno to Airolo, by Val Lavizzara	309
„ D.	Locarno to Airolo, by Val Bavona	311
„ E.	Locarno to Andermatten in Val Formazza	314
„ F.	Locarno to Premia, by Val Rovana	315
„ G.	Locarno to Domo d' Ossola, by Val Onsernone	315
„ H.	Locarno to Domo d' Ossola, by Val Vigezzo	316
„ I.	Canobbio to Domo d' Ossola, by Val Canobbina	317
„ K.	Pallanza, or Intra, to Domo d' Ossola, by Val Intrasca	317

Section 33.

COMO DISTRICT.

Rte. A.	Coire to Como, by the Splügen Pass	319
„ B.	Colico to Milan, by Lecco	330
„ C.	Bellinzona to Como, by Lugano	333
„ D.	Campo Dolcino to Mesocco	336
„ E.	Chiavenna to Roveredo	336
„ F.	Gravedona to Bellinzona	337
„ G.	Luino to Menaggio, by Lugano	337
„ H.	Argegno to Osteno, by the Val Intelvi—Ascent of the Monte Generoso	339
„ I.	Laveno to Como, by Varese	343
„ K.	Bellaggio to Erba, by Val Assina	344
„ L.	Como to Lecco, by Erba	345

CHAPTER X.

RHÆTIAN ALPS.

Section 34.

PRÆTTIGAU DISTRICT.

		PAGE
Rte. A.	Bregenz to Landeck, by Feldkirch and the Arlberg Pass	350
„ B.	Bludenz to Landeck, by Montafun and the Paznaunthal	352
„ C.	Feldkirch to Maienfeld	354
„ D.	Maienfeld to Süs, by the Prættigau and the Vereina Pass	355
„ E.	Glacier Passes from Klosters to Lavin, or Guarda—Ascent of Piz Linard	358
„ F.	Passes from the Valley of the Ill to the Prættigau	360
„ G.	Pattenen in Montafun to Guarda, by the Fermunt Pass	362
„ H.	Passes from the Paznaunthal to the Engadine	362

Section 35.

ALBULA DISTRICT.

Rte. A.	Coire to Samaden, by the Julier Pass	365
„ B.	Thusis to Tiefenkasten	369
„ C.	Coire to Samaden, by the Albula Pass	370
„ D.	Lenz to Klosters, by Davos	372
„ E.	Coire to Davos am Platz, by the Strela Pass	373
„ F.	Davos am Platz to Süs, by the Fluela Pass	375
„ G.	Davos am Platz to Scanfs, by the Scaletta Pass—Ascent of the Schwarzhorn	376
„ H.	Davos am Platz to Scanfs, by the Sertig Pass	378
„ I.	Bivio to Casaccia, by the Septimer Pass	378
„ K.	Andeer to Casaccia, by the Aversthal	379
„ L.	Andeer to Chiavenna, by the Aversthal	382
„ M.	Andeer to Campo Dolcino, by the Aversthal	383

Section 36.

BERNINA DISTRICT.

Rte. A.	Chiavenna to Nauders, by the Val Bregaglia and Engadine	385
„ B	Samaden to Pontresina—Excursions from Pontresina	393
„ C.	Bevers to St. Moritz, by Val Bever	398
„ D.	Tour of the Bernina—Sella Pass	398
„ E.	Colico to Bormio, by the Val Tellina	400
„ F.	Morbegno to the Val Bregaglia, by Val Masino—Ascent of Monte della Disgrazia	405
„ G.	Casaccia to Sondrio, by the Muretto Pass	409
„ H.	Pontresina to Chiesa in Val Malenco, by the Capütschin and Scerscen Passes	409
„ I.	Chiesa to Poschiavo, by the Passo di Canciano	411
„ K.	Samaden to Tirano, by the Bernina Pass	412
„ L.	Pontresina to Bormio	415
„ M.	Bormio to the Engadine, by Val Livigno	417

Section 37.

ORTELER DISTRICT.

Rte. A.	Bormio to Mals—Pass of the Stelvio—Ascent of the Orteler Spitze	421
„ B.	Bormio to Trento, by Val Furva and Val di Sole	425
„ C.	Santa Catarina to Latsch, by the Passo Cevedale	430

PAGE
Rte. D. Glacier Passes from Santa Catarina to Prad 432
„ E. Laas to Sulden, by the Laaserthal 434
„ F. Malè to Trafoi, by the Suldenthal 435
„ G. Rabbi to Meran, by the Ultenthal 438
„ H. Malè to St. Pankraz in the Ultenthal 440
„ I. Cles to Meran or Botzen 441
„ K. Bormio to Santa Maria 442
„ L. Zernetz to Mals, by the Ofen Pass and Val Mustair 444
„ M. Schuls to Mals, by Val Scarla 445
„ N. Remüs to Mals, by Val d'Uina 446

CHAPTER XI.

LOMBARD ALPS.

Section 38.

BERGAMASQUE VALLEYS.

Rte. A. Bergamo to Tirano, by Val Seriana 449
„ B. Bergamo to Sondrio, by Val Brembana 450
„ C. Bergamo to Morbegno, by the Passo di San Marco 451
„ D. Piazza to Morbegno, by Val Stabina—Pizzo dei Tre Signori . . 452
„ E. Lecco to Bellano, by Val Sassina 453
„ F. Varenna to Introbbio—Ascent of the Grigna 455
„ G. Morbegno to Bellano, by Val Varrone 456
„ H. Introbbio to Colico—Ascent of the Monte Legnone 457

Section 39.

VAL CAMONICA DISTRICT.

Rte. A. Malè in Val di Sole to Brescia, by the Tonale Pass and Val Camonica . 459
„ B. Bergamo to Breno in Val Camonica, by Lovere 461
„ C. Bergamo to Breno, by Clusone 462
„ D. Lovere to Edolo, by Val di Scalve 462
„ E. Edolo to Sondrio, by the Aprica Pass 463
„ F. Ponte di Legno to Santa Catarina, by the Gavia Pass 463
„ G. Breno to Lodrone, by the Croce Domini Pass 465
„ H. Iseo to Gardone in Val Trompia 466
„ I. Brescia to Lodrone, by Val Trompia 466
„ K. Brescia to Vestone in Val Sabbia 467

Section 40.

ADAMELLO DISTRICT.

Rte. A. Malè to Salò on the Lake of Garda, by Val Rendena and the Lake of Idro . 469
„ B. Pinzolo to Edolo, by Val di Genova 474
„ C. Condino to Edolo, by Val Daone 478
„ D. Tione to Riva, on the Lake of Garda 481
„ E. Lodrone to Riva, by Val Ampola and the Lake of Ledro 482
„ F. Pieve di Ledro to Tione 484
„ G. Storo to Toscolano on the Lake of Garda, by Val Vestino . . . 485
„ H. Pinzolo to Riva, by the Bocca di Brenta, and Molveno 486

LIST OF ILLUSTRATIONS.

MAPS.

KEY MAP TO ALPINE GUIDE, Part II. . *To be pasted inside the cover at the beginning*

THE CENTRAL ALPS—General Map . . . . . *To face title-page*

OBERLAND DISTRICT . . . . . *To face page* 54

ALPS OF URI and some of the neighbouring Cantons . . . . „ 176

ALPS OF GLARUS and part of the neighbouring Cantons . . . „ 188

BERNINA ALPS . . . . . „ 383

ORTELER DISTRICT . . . . . „ 419

CENTRAL ALPS—Geological . . . . . *at end*

PLATE.

PANORAMA FROM THE PIZ LANGUARD . . . . *to face page* 394

WOODCUTS.

THE DIABLERETS . . . . . *in page* 10

PANORAMA seen from the summit of the Gemmi Pass . . . . „ 38

AUTHORITIES QUOTED.

The quotations introduced in the following work are distinguished by the initials corresponding to the subjoined list of authorities, and are chiefly taken from the MSS. notes communicated to the Editor.

W. G. A.	W. G. Adams, Esq.
F. A.	Signor Francesco Ambrosi.
T. G. B.	Rev. T. G. Bonney.
W. B.	William Brinton, Esq., M.D.
E. N. B.	Edward N. Buxton, Esq.
G. C.	M. le Chanoine G. Carrel.
G. C. C.	G. C. Churchill, Esq.
J. J. C.	J. J. Cowell, Esq.
R. W. F.	R. W. E. Forster, Esq.
J. F.	Mrs. Freshfield, authoress of 'Alpine Byways,' &c.
H. B. G.	H. B. George, Esq.
W. E. H.	W. E. Hall, Esq.
F. V. H.	F. Vaughan Hawkins, Esq.
J. J. H.	Rev. J. J. Hornby.
F. J. H.	Rev. F. J. A. Hort.
J. G. H.	J. Godfrey Humphry, Esq.
F. W. J.	F. W. Jacomb, Esq.
J. R. K.	Rev. J. R. King.
E. L.	A Lady.
M.	Murray's 'Handbook for Switzerland, Savoy, and Piedmont.'
W. M.	William Mathews, jun., Esq.
A. M.	Arthur Milman, Esq.
E. M.	Herr Edmund von Mojsisovics.
A. W. M.	A. W. Moore, Esq.
R. C. N.	R. C. Nichols, Esq.
A. A. R.	A. Adams Reilly, Esq.
C. H. P.	Rev. C. H. Pilkington.
K. S.	Lt.-Colonel Karl von Sonklar.
J. S.	Rev. John Sowerby.
L. S.	Leslie Stephen, Esq.
F. F. T.	F. Fox Tuckett, Esq.
R. S. W.	R. Spence Watson, Esq.
A. W.	Arthur P. Whately, Esq.
C. L. W.	Rev. C. L. Wingfield.
S. W.	Stephen Winkworth, Esq.

PRELIMINARY NOTES

TO

THE CENTRAL ALPS.

Tours in the Central Alps.

The following sketches of tours in Switzerland, and the adjacent parts of Lombardy and Tyrol, may be found useful to travellers. It is taken for granted that additional time should be allowed for enjoying the more interesting spots. All classes of travellers naturally avail themselves of railways and steamers when these present themselves.

I. Carriage Tour in Switzerland—32 days' easy travelling, exclusive of halts, and starting from Basle.

1. Zurich by rail.
2. To Lucerne over the Albis, or by Lake of Zug and Küssnacht.
3. Escholzmatt, by the Entlebach.
4. Berne.
5. Railway to Fribourg and Vevey.
6. By Aigle to Plan des Iles.
7. Château d'Oex, by new road; thence to Saanen.
8. Thun, by the Simmenthal.
9. Interlaken.
10, 11. Excursions to Lauterbrunnen, and Grindelwald.
12. Baths of Reichenbach, visiting the Giessbach on the way.
13. Stanzstad or Stanz, by the Brünig.
14. By Beckenried and lake steamer to Brunnen, thence to Schwyz.
15. Excursion to Goldau and Morgarten.
16. Visit Grütli, and proceed to Amstäg by Altdorf.
17. Airolo by St. Gothard Pass.
18. Bellinzona.
19. San Bernardino, by Val Mesocco.
20. Splügen.
21. Chiavenna, by Splügen Pass.
22. Pontresina, or Samaden.
23. Excursion to Bernina Pass.
24. Excursion by char to Roseg Glacier.
25. Mollns, by Julier Pass.
26. Coire, or by new road to Thusis when completed.
27. Excursion to Via Mala, return to Reichenau.
28. Ragatz, and excursion to Pfäfers.
29. By rail to Wesen; carriage thence to Stachelberg.
30, 31, 32. Return to Basle by Zurich and Schaffhausen; or go to Friedrichshafen on Lake of Constance by rail to Altstädten; road to Gais, Appenzell, and St. Gall; rail thence to Rorschach.

II. Carriage Tour of 40 days, exclusive of halts, starting from Rorschach on the Lake of Constance, omitting the Bernese Oberland, and including the Italian Lakes.

1. Rail to Ragatz; excursion to Pfäfers.
2. Rail to Coire; carriage to Thusis.
3. By Via Mala to Splügen, thence to San Bernardino.
4. By Val Mesocco to Bellinzona, and Locarno.
5. Excursion to Bignasco, and return to Locarno.
6. Lago Maggiore. Sleep at Pallanza, Baveno, or Stresa.
7. To Lugano by Luino.
8. Bellaggio, by Porlezza and Menaggio.

9. Excursion to Asso.
10. Como by steamer; thence to Lecco by Erba.
11. Morbegno, by Colico.
12. Excursion to Baths of Masino.
13. Edolo by Aprica Pass.
14. Lovere on Lake of Iseo.
15. Steamer to Sarnico or Iseo; thence to Brescia.
16. Salò on Lake of Garda.
17. Storo in Italian Tyrol
18. Riva, by Val di Ledro.
19. Tione, and Pinzolo.
20. Trento, by Vezzano.
21, 22. Excursion to Cles and Rabbi, returning to San Michele.
23. Meran.
24. Trafoi.
25. Bormio, by Stelvio Pass.
26. Excursion to Sta. Catarina.
27. Le Prese, by Tirano.
28. Pontresina, by Bernina Pass.
29. Excursion to Roseg Glacier.
30. Molins, by Julier Pass.
31. Coire.
32. Stachelberg, by Glarus.
33. Return to Glarus. Excursion to Klönthal.
34. Rail to Rapperschwyl; carriage to Schwyz.
35. Excursion to Devil's Bridge, returning to Amstäg.
36. Lucerne.
37. Excursion to Sarnen, and return.
38. Zurich, by Lake of Zug.
39, 40. Schaffhausen and Basle.

III. Tour of three months in the Central Alps, starting from Basle, for moderate pedestrians, and ladies able to ride. Alternative routes given in italics are practicable only on foot.

1, 2. By Berne and Fribourg to Vevey.
3. Château d'Oex, by Col de Jaman.
4. Plan des Iles, by Comballaz.
5. Lauenen, by Gsteig.
6. An der Lenk.
7. Excursion to Sieben Brunnen.
8. Thun, by Zweisimmen.
9, 10. Lauterbrunnen and Mürren, returning to Lauterbrunnen.
11. Excursion to Steinberg Alp, or to *Schmadribach Fall.*
12. Wengern Alp.
13. Descent to Grindelwald; visit the Eismeer.
14. Ascend Faulhorn.
15. Reichenbach Hotel, by Rosenlaui.
16. Grimsel Hospice.
17. Excursion to Aar Glacier.
18. Rhone Glacier.
19. Aeggischhorn Hotel.
20, 21. Excursions thence.
22. Bell Alp Hotel, by Brieg, or by *Aletsch Glacier.*
23. Baths of Leuk.
24. Ascent of Torrenthorn.
25. Kandersteg, by Gemmi Pass.
26. Lucerne, by Brienz and Brünig Pass.
27. Ascent of Rigi, by Kussnacht or Goldau.
28. Descent to Weggis.
29. Lake of Lucerne. Sleep at the Sonnenberg.
30. Visit Grütli, and go to Altdorf.
31. Stachelberg by Klausen Pass.
32. Excursion to Sand Alp.
33. Ragatz, by Glarus; visit Pfäfers.
34. Thusis. Excursion to Via Mala.
35. Tiefenkasten; thence to St. Moritz, by Julier Pass.
36, 37, 38. Excursions from St. Moritz, or Pontresina.
39. Le Prese, by Bernina Pass.
40. Santa Catarina.
41. Trafoi, by the Stelvio Pass.
42. Meran.
43. Cles, by Botzen, and San Michele.
44. Char to Dimaro, ride to Pinzolo (securing mules beforehand).
45. Excursion in Val di Genova.
46. Riva on Lake of Garda, by Tione.
47. Storo, by Val di Ledro.
48. Brescia, by Vestone.
49. Lovere, by Iseo.
50. Bergamo, by Clusone.
51. Lecco by rail. Char to Introbbio.
52. Ride to Bellano, or Varenna; boat to Bellaggio.
53, 54. Lake of Como.
55, 56. Lugano, by Menaggio (Monte Salvatore) —or *Monte Generoso*, and thence to Lugano.
57. Pallanza, or Baveno. Borromean Islands.
58. Locarno.
59. Excursion to Bignasco.
60. San Bernardino, by Val Mesocco.
61, 62, 63. Ilanz by Hinterrhein and the Valserberg—or by Splügen and the *Löchliberg.*
64. Dissentis.
65. Olivone, by Lukmanier Pass.
66. Faido, or Airolo.
67. Andermatt, by St. Gothard Pass.
68. Schwyz, by Altdorf.
69, 70, 71. Basle, by Zurich and Schaffhausen—or Rorschach, by St. Gall and Appenzell.

Should the season be too far advanced for the higher valleys, it would be better to go from Locarno, by Bellinzona, to Gravedona on the Lake of Como. Thence to Morbegno, making an excursion to the Baths of Masino. Thence to Chiavenna, and over the Splügen Pass to Coire. Basle or Rorschach may be reached thence by railway.

IV. Pedestrian Tour of two months in Swiss Alps, starting from Rorschach.

1. Weissbad in Appenzell.
2. Ascent of Sentis.
3. Nesslau in Toggenburg.
4. Wesen, by the Speer.
5. Glarus, by Obwalden, and the Mürtschen Alp.

6. Elm in Sernfthal.
7. Segnes Pass to Flims.
8, 9. Splügen and Hinterrhein, by Savien Platz.
10. Excursion to source of the Rhine.
11. Ilanz, by Valserberg.
12, 13, 14. Stachelberg by Kisten Pass; thence to Amstäg by Klausen Pass—or by Sand Pass, and Clariden Grat—or by Dissentis, and Kreuzli Pass.
15, 16, 17. Reichenbach by Surenen Pass and Engelberg, with Ascent of the Titlis—or by Susten Pass, and Ascent of Sustenhorn.
18. Faulhorn.
19. Interlaken, by Giessbach.
20, 21, 22. Mürren; ascent of the Schilthorn; Wengern Alp; Grindelwald.
23. Grimsel Hospice by Strahleck, or by Finsteraar Joch.
24. Rhone Glacier.
25. Æggischhorn Hotel.
26, 27. Excursions from Æggischhorn.
28. Bell Alp Hotel.
29. Ascent of Sparrenhorn.
30, 31, 32, 33. Kandersteg by Baths of Lenk (ascent of the Torrenthorn), and the Gemmi Pass; thence to Lauterbrunnen by Tschingel Pass—or by Kippel; thence by the Lötschen Pass to Kandersteg; and to Lauterbrunnen by the Dünden Grat.
34. Frutigen.
35. An der Lenk, by Adelboden.
36. Ascent of Wildstrubel.
37, 38. Sion, by Lauenen, and the Gelten Pass—or by Gstelg, and the Sanetsch Pass.
39. Grion, by the Col de Chéville.
40. Ascent of Grand Moveran, or Diablerets.
41. Plan des Iles.
42. Ascent of Chamossaire.
43. Château d'Oex.
44. Vevey, by Col de Jaman.
45. By Moléson to Bulle.
46. Baths of Weissenburg, by Val de Bellegarde and Klus.
47, 48. Ascent of Stockhorn, or Niesen, and then to Thun.

Return to England by Berne and Neuchâtel, or by Basle.

V. Pedestrian Tour of two months in the Grisons, Lombardy, and Western Tyrol. Travellers starting late can modify the arrangement of the tour, so as to give the hottest weather to the higher valleys.

1. Rorschach to Maienfeld; thence to Küblis, or Klosters.
2. Davos am Platz.
3. Ascent of Weissfluh.
4. Coire, by Strela Pass.
5. Ascent of Stätzerhorn, descending to Thusis.
6. Andeer.
7. Casaccia, by Aversthal.
8, 9. Baths of Masino, by Bondo, or Castasegna.
10. Return to Casaccia, by Zocca Pass.
11. St. Moritz; thence to Pontresina by Acla, or by Surlei Fuorcla.
12, 13. Excursions from Pontresina.
14, 15. Poschiavo, or Le Prese, by Sella Pass, or Capütschin Pass, and by Canciano Pass.
16. Santa Catarina.
17, 18. Excursions from Sta. Catarina, or Baths of Bormio.
19. Trafoi. Visit Drey Brunnen.
20. Salt in Martellthal.
21. To Pejo, or Rabbi by Glacier Pass.
22, 23. Pinzolo, in Val Rendena.
24, 25. Excursions from Pinzolo.
26. Riva, by Tione and Ballino.
27. Storo.
28. Bagolino.
29. Breno in Val Camonica, by Croce Domini Pass.
30. Lovere, on Lake of Iseo.
31. Castione by Val di Scalve.
32. Ascent of Monte Presolana.
33. Fiumenero, in Val Seriana.
34. Piazza, or Olmo, in Val Brembana.
35. Ascend Pizzo dei Tre Signori, descend to Mines of Valbona, or to Introbbio.
36. Varenna, by Cainallo Pass.
37. Premana, by Bellano.
38. Ascend Legnone; descend thence to Morbegno.
39. Bellaggio, or Tremezzo.
40, 41. Excursions about Lake of Como.
42, 43. Monte Generoso. Lugano.
44, 45. Visit Lago Maggiore, and go to Locarno.
46, 47. San Carlo in Val Bavona; thence to Andermatten in Val Formazza—or by Cevio to Premia.
48, 49, 50. Brieg, by Isella, Val Cherasca, and Kaltwasser Joch, or by Ritter Pass—or else by Val Devera, the Kriegalp Pass, or the Col della Rossa.

Return to England by Sion and the Lake of Geneva.

Books and Maps connected with the Central Alps.

It appears convenient to give in this place a list of books especially connected with the districts included in the present volume, and also a list of maps. In regard to the latter it must be observed that the detailed maps of particular districts in Switzerland published before the appearance of the Federal Map, produced under the direction of General Dufour, have been completely supplanted by that admirable work. It is now complete, and the traveller who would quit beaten tracks should provide himself with

the sheets comprising the district that he intends to visit. A new edition of Keller's general map of Switzerland, entitled 'Keller's zweite Reisekarte der Schweiz,' has been announced as this volume was going to press, but the Editor has not seen it.

The territory comprised in the present volume fell within three states when the existing Government maps were executed. A small portion only, including the valley of the Tosa, and the western shores of the Lago Maggiore, is comprehended in the general maps of Piedmont published by the Stato Maggiore, or War Department, at Turin. Those maps have justly been the object of severe criticism, and fall much below the level of other similar modern works.

The general map of Venetian Lombardy, executed by the Austrian Government, is on the whole satisfactory. It is needless to say that the territory included in the map now forms a part of the kingdom of Italy. A tolerable reduction of that map, in four sheets, has been published by Artaria at Milan. The NW. sheet nearly comprises the portion of the country described in the present volume.

The Austrian map of Tyrol is inferior to that last spoken of, and a satisfactory map of that country on a scale suited to a mountaineer is still a desideratum. Mayr's general map of Tyrol and the adjoining territory is tolerably good; and Scheda's excellent map of the Austrian Empire gives every detail that is possible on the scale adopted in his work.

List of Books connected with the Central Alps.

Berg- und Gletscher-Fahrten in den Hochalpen der Schweiz, by G. Studer, M. Ulrich, and J. J. Weilenmann, 1 vol. Schulthess, Zürich, 1859.

———— Second series, 1 vol. Schulthess, Zürich, 1863.

Coaz (J.)—Ersteigung des Piz Valrhein. In Jahresbericht der Naturforschenden Gesellschaft Graubündens, 1857–8, Chur, 1859.

Das Hochgebirge von Grindelwald, by Pr. Aebi Ev. Fellenberg and Gerwer, Coblenz, 1865.

Ebel (J. G.)—Voyage pittoresque dans le Canton des Grisons. &c., avec 32 Vues et une Carte routière, par J. J. Meyer, 8vo. Zürich, 1827.

Engelhardt (C. M.)—Naturschilderungen aus den höchsten Schweizer-Alpen, 1 vol. with atlas, Basel, 1840.

Freshfield (Mrs. H.)—A Summer Tour in the Grisons and Italian Valleys of the Bernina, 1 vol. Longmans, 1862.

Heer und Blumer. Der Kanton Glarus, Ebendas, 1846 (mit der Gebirgskunde von Arnold Escher).

Hegetschweiler (J.)—Reisen in den Gebirgstock zwischen Glarus und Graubünden, 1819–20–22, 1 vol. Orell Füssli, Zürich, 1825.

Hirzel-Escher. Wanderungen in weniger besuchte Alpengegenden der Schweiz, &c. 1 vol. Orell Füssli, Zürich, 1829.

Hüber (W.)—Les Glaciers. Paris, Challamel aîné, 1867.

Jahrbuch des Schweizer Alpenclubs. 4 vols. Bern, 1864 to 1867.

Kasthofer. Bemerkungen auf einer Alpenreise über den Susten, Gotthard, Bernardin, und Aarau, 1822.

Latrobe (C. S.)—The Alpenstock; or Sketches of Swiss Scenery and Manners, 1 vol. 2nd edition, London, 1839.

Lebert (Prof. Dr. H.).—Das Engadin, seine Heilquellen, seine Natur, und seine Bewohner, 1 vol. Korn, Breslau, 1861.

Lechner (Ernst)—Piz Languard und die Bernina-Gruppe bei Pontresina, Oberengadin, 1 vol. Engelmann, Leipzig, 1858.

Leonhardi (G.)—Das Poschiavino Thal, 1 vol. Engelmann, Leipzig, 1859.
———————— Das Veltlin, 1 vol. Engelmann, Leipzig, 1859.
———————— Der Comersee und seine Umgebungen, Engelmann, Leipzig.
Lory. Voyage pittoresque de l'Oberland Bernois, fol., 30 col. pl., Didot, Paris. 1822.
Lory (*fils*)—Souvenirs de la Suisse. ou Recueil de Vues . . . pour faire suite au Voyage pittoresque dans l'Oberland Bernois, 37 col. pl, fol. Neuchâtel, 1829.
Meyer (J. R. & H.)—Reise auf den Jungfrau-Gletscher und Ersteigung seines Gipfels, im Augstmonat 1811 unternommen; aus den Miszellen für die neueste Weltkunde besonders abgedruckt.
Meyer (R.)—Reise auf die Eisgebirge des Kantons Bern, und Ersteigung ihrer höchsten Gipfel im Sommer 1812, Sauerländer, Aarau, 1813.
Papon (Dr. J.)—Engadin. Zeichnungen aus der Natur und dem Volksleben eines unbekannten Alpenlandes, 1 vol. Scheitlin und Zollikofer, St. Gallen, 1857.
Payer (Lieut. J.)——Durchforschung der Trafoier Alpen. In 'Petermann's Mittheilungen.' X. 1866. Gotha, Perthes.
———————————Die Ortler Alpen (Sulden-Gebiet und Monte Cevedale). In 'Petermann's Mittheilungen.' Ergänzungsheft, No. 18. 1867. Gotha, Perthes.
Rambert (E.)—Les Alpes suisses. 2de série. Lausanne et Paris, 1866.
Röder und Tscharner. Der Kanton Graubünden, historisch, geographisch, statistisch geschildert, 1te Abtheilung, St. Gallen, 1838.
Rohrdorf. Reise und Ersteigung der Jungfrau in August, 1828.
Roth (A.)—Gletscherfahrten in den Berner Alpen, 1 vol. Springer, Berlin, 1861.
———— Finsteraarhornfahrt, 1 vol., Springer, Berlin, 1861.
———— und v. Fellenberg. Doldenhorn und Weisse Frau, with 11 coloured illustrations and a map, Baedeker, Coblenz, 1863.
———— The same work in English, Baedeker, Coblenz, 1863.
Simler (Dr. R. T.)—Der Tödi-Rusein, und die Excursion nach Oberland Alp, with coloured illustrations and a contour map, Haller, Bern, 1863.
Simond. Voyage en Suisse dans les années 1817, 1818 et 1819, 2 vols. 8vo. Paris, 1824.
Studer (Gottlieb)—Topographische Mittheilungen aus dem Alpengebirge, 1 vol. and atlas, Huber & Co. Bern and St. Gallen, 1843.
Theobald (Prof. G.)—Das Bündner Oberland; oder Vorderrhein mit seinen Seitenthälern, 1 vol. Hitz, Chur, 1861.
———————————— Naturbilder aus den Rhätischen Alpen. Ein Führer durch Graubündten, 2nd edition, maps and illustrations, Hitz, Chur, 1862.
———————————— 'Das Thal von Poschiavo' und 'Samnaun' in Jahresbericht der Naturforschenden Gesellschaft Graubündens, 1857–8, Chur, 1859.
———————————— Cima da Flix und Piz Err, in same work, 1860–61.
Tscharner (P. C. von)—Wanderungen durch die Rhätischen Alpen, 2 vols. Zürich, 1829.
Tschudi (Iwan)—Schweizerführer, 1 vol. in 3 parts, St. Gallen, 1865.
Weilenmann (J. J.)—Ersteigung des Piz Linard im Unter-Engadin, 1 vol. Scheitlin & Zollikofer, St. Gallen, 1859.

List of Maps of the Central Alps.

Dufour (Genl.)—Topographischer Atlas der Schweiz, $\frac{1}{100000}$, 25 Blätter.
———————— Carte Topographique du Canton de Genève, $\frac{1}{25000}$, 4 Bl., Genève, 1837–38.

Gümbel (C. W.)—Topographische Karte des Kantons Zürich, $\frac{1}{25000}$. 32 Bl.
Keller (H.)—Zweyte Reisekarte der Schweiz, Zürich.
Leuthold (H. F)—Reisekarte der Schweiz, Zürich.
Michaelis (E. H.) – Carta della Republica e Cantone del Ticino, $\frac{1}{400000}$. 1 Bl., 1847
Schlagintweit (A. H.)—Karte der Monte Rosa und seinen Umgebungen im Jahre 1861 entworfen, Weigel, Leipzig, 1854
Studer (B.) u. Escher von der Linth. Carte géologique de la Suisse, Wurster & Cie., Winterthur, 1853.
——— (Gottlieb)—Karte der südlichen Wallisthäler, $\frac{1}{100000}$.
Weiss (J. H.)—Atlas Suisse, &c., $\frac{1}{115200}$, 16 Blätter, Aarau, 1786–1802.
——— (V.)—Der Kanton Bern, $\frac{1}{200000}$, 1 Bl., Bern, 1830, 2nd edition, 1854.
Wurster u. Cie. Karte des Kantons Graubüntden, $\frac{1}{250000}$, 1 Bl., Wurster & Cie., Winterthur, 1862.
Ziegler. Neue Ziegler'sche Karte der Schweiz. Wurster & Cie., Winterthur, 1857.
——— (J. M.)—Topographische Karte der Kantone St. Gallen und Appenzell, $\frac{1}{25000}$, 16 Bl., Winterthur u. Berlin, 1852–55.
———————— Karte des Cantons Glarus, $\frac{1}{50000}$, 2 gr. Bl., Wurster & Cie., Winterthur, 1862.
———————— Ueber topographische Karten, mit 4 reducirten Karten vom Kanton Glarus, 4 Bl., $\frac{1}{125000}$, Wurster & Cie., Winterthur, 1862.
———————— Karte des Kantons Tessin, $\frac{1}{150000}$, 1 Bl., Wurster & Cie., Winterthur.

The reader is referred to the Introduction to this work for information respecting books of a more general character, scientific and descriptive, connected with the chain of the Alps.

THE

ALPINE GUIDE.

CENTRAL ALPS.

ABBREVIATIONS AND EXPLANATIONS.

The following are the chief abbreviations used in this work :—

hrs., m.—for hours and minutes. When used as a measure of distance, one hour is meant to indicate the distance which a tolerably good walker will traverse in an hour, clear of halts, and having regard to the difficulty of the ground. In cases where there is a considerable difference of height, the measure given is intended as a mean between the time employed in ascending and descending, being greater in the one case and less in the other.

ft., yds.—for feet and yards. The heights of mountains, &c., are given in English feet above the level of the sea, and are generally indicated in the manner usual in scientific books, by the figures being enclosed in brackets, with a short stroke.

m.—for mile. Unless otherwise expressed, distances are given in English statute miles.

rt., l.—for right and left. The right side of a valley, stream, or glacier, is that lying on the right hand of a person following the downward course of the stream.

The points of the compass are indicated in the usual way.

Names of places are referred in the Index to the pages where some useful information respecting them is to be found.

Throughout this work the reader is frequently referred for further information to the Section and Route where this is to be found. When the reference is made to a passage occurring in the same Section, the Route alone is mentioned.

ALPINE GUIDE.

CHAPTER VII.

BERNESE ALPS.

Section 22.

DIABLERETS DISTRICT.

Route A—Paris to Ormond Dessus, by Neuchâtel and Lausanne . 4
Route B—Ormond Dessus to Château d'Oex and Bulle . . 11
Route C—Ormond Dessus to Bex . . 12
Route D—Bex to Sion, by the Col de Cheville 13
Route E—Sion to Saanen . . . 15
Route F—Saanen to Ormond Dessus . 18
Route G—Vevey to Thun, by Bulle and the Simmenthal . . . 19
Route H—Château d'Oex to Vevey, on foot or horseback . . 22
Route I—Vevey to Fribourg and Berne 23
Route K—Lausanne to Berne . . 24
Route L—Bulle to Thun . . . 26

Section 23.

GEMMI DISTRICT.

Route A—Paris to the Baths of Leuk, by Basle and Thun—Ascent of the Doldenhorn and Altels 28
Route B—Thun to Kandersteg, by the Kien Thal—Ascent of the Blümlis Alp 41
Route C—Kandersteg to Turtman, or Visp, by the Lötschen Pass. 44
Route D—Baths of Leuk to Ferden or Kippel 46
Route E—Thun to Sierre, by Adelboden, and the Strubeleck. . . 47
Route F—Thun to Sion, or Sierre, by the Rawyl Pass 48
Route G—Kandersteg to Lauenen, by Adelboden and An der Lenk 51
Route H—Baths of Leuk to An der Lenk—Ascent of the Wildstrubel 52

Section 24.

BERNESE OBERLAND.

Route A—Thun to Interlaken and Meyringen, or Reichenbach . 58
Route B—Meyringen to Interlaken, by Grindelwald and Lauterbrunnen 65
Route C—Meyringen to Brieg, by the Grimsel 77
Route D—Viesch to Brieg, by the Æggischhorn and Bell Alp—Ascent of the Finsteraarhorn, Jungfrau, Aletschhorn . 84
Route E—Interlaken to Kandersteg . 95
Route F—Lauterbrunnen to Kandersteg 96
Route G—Lauterbrunnen to Turtman, by the Lötschenthal—Ascent of the Bietschhorn . 101
Route H—Lauterbrunnen to the Æggischhorn, by the Aletsch Glacier 103
Route I—Grindelwald to the Æggischhorn—Ascent of the Mönch and Almerhorn . . . 106
Route K—Grindelwald to the Grimsel—Ascent of the Schreckhorn . 113
Route L—Rosenlaui to Meyringen, by the Urbachthal and Weitsattel 121
Route M—Meyringen to Grindelwald, by the Bergli Joch . . . 123
Route N—Meyringen to the Grimsel, by the Gauli Pass . . . 124
Route O—Grimsel to the Æggischhorn—Ascent of the Oberaarhorn 125
Route P—Berne to Lucerne, by the Entlebuch 127
Route Q—Interlaken to Burgdorf, by the Emmenthal 128

Section 25.

TITLIS DISTRICT.

Route A—Brienz or Meyringen to Lucerne, by the Brünig . . 130
Route B—Meyringen to Stanzstad, by the Melch Thal . . . 132
Route C—Sarnen to Engelberg . . 134
Route D—Meyringen to Engelberg—Ascent of the Titlis . . 134
Route E—Meyringen to Wasen, by the Susten Pass—Ascent of the Sustenhorn 137
Route F—Mühlestalden to the Grimsel, by the Triftlimmi . . 139
Route G—Stein Alp to Guttannen, by the Steinlimmi and Furtwang Passes — Ascent of the Steinhaushorn and the Mährenhorn . . . 142
Route H—Geschenen in the valley of the Reuss to Meyringen, by the Geschenenthal . . . 143

Of the preceding portion of this work the larger part was devoted to the description of the Pennine Alps and the ranges immediately connected with them. To that group, and to those extending from it to the east-

ward, and hereinafter described, the designation of *main chain* of the Alps is commonly given, both because it is the dividing range between the waters that flow into the basin of the Po on the one hand, and those which are distributed through France, Germany, and Eastern Europe on the other, and also because its height and its geological constitution point it out as the region where the forces that have elevated the Alps have acted with most intensity.

The most considerable of all the secondary ranges of the Alps is that which is described in the present chapter under the title Bernese Alps. Under this denomination we include the entire range which extends from the gorge of St. Maurice, through which the Rhone finds its way to the Lake of Geneva, to the still narrower defile that gives a passage to the Reuss in its descent from the St. Gothard to the Lake of Lucerne. The principal ridge, whose highest peak is the Finsteraarhorn, forms the watershed between the Cantons Berne and Valais, being limited to the S. by the deep trench forming the valley of the Rhone; but on the northern side a wide tract of mountain country connected with this range extends through a great part of Canton Berne, throwing out branches to the W. into the adjoining Cantons of Vaud and Fribourg, and to the E. into Uri and Unterwalden.

It is in the central and eastern portions of the range only that crystalline rocks make their appearance; the western part is composed exclusively of sedimentary deposits, and the secondary ridges extending through Berne and the adjoining cantons are formed of jurassic, cretaceous, or eocene strata. To the eye of the geologist it is not easy to fix limits to the range which culminates in the peaks of the Bernese Oberland. To the WSW., as has been remarked in Sections 12 and 17 of this work, it is evidently connected with the ranges that extend across Northern Savoy and Dauphiné, while in the opposite direction it is still more closely linked with the chain of the Tödi, from which it is separated by the defile of the Reuss.

Although the outer valleys are extremely irregular in their direction, having owed their origin in great part to erosive forces acting on friable strata, there is amongst them an unmistakeable tendency to parallelism with the main ridge, which in its turn conforms to the general direction that predominates in the Pennine chain. Accompanying this fact is the frequent recurrence of deep and narrow valleys, or true clefts, in a direction transverse to that of the main chain. Two such clefts are the defiles of the Rhone and the Reuss, which form the orographic limits of the entire group.

The extreme beauty of the scenery, and the facilities offered to travellers by the general extension of good inns and other needful appliances, must always make the Bernese Oberland one of the portions of the Alps most visited by tourists. Unlike the French and Piedmontese Alps, which until very lately have been left to be explored by strangers, this region has been long visited by Swiss travellers and men of science. They have explored most of the mountain ranges not very difficult of access, and, further than this, have attained most of the higher summits. The works of M. Desor and M. Gottlieb Studer, referred to in the Introduction, have been followed by several other publications that bear testimony to Swiss mountaineering activity; yet the adventurous members of the Alpine Club have found room for many new expeditions, both in climbing peaks previously untouched, and in devising passes across portions of the range where nature seemed to have placed impassable barriers to human enterprise. The western portion of the chain, presenting less

lofty summits, and comparatively inconsiderable glaciers, has attracted far less attention, and on this account, perhaps, is less well supplied with inns and other conveniences for travellers. For the same reason, however, it offers attractions to those who prefer to the frequented haunts of tourists retired spots where, in following the track of the native chamois hunter, they discover scenes whose beauty is heightened by the charm of surprise.

It may be remarked, that the range of the Bernese Alps described in the present chapter furnishes to the judicious traveller ample occupation for a long summer's tour. The early portion of the season being passed in the beautiful district adjoining the Lake of Geneva, he would gradually advance towards the east—shifting his head-quarters in succession from Plan des Isles to An der Lenk, and thence to Kandersteg or Leukerbad—devoting the larger portion of the season to the grand scenery of the Oberland.

The arrangements made in the Canton Berne for the accommodation of travellers, and for the supply of horses, carriages, and guides, are usually sufficient and satisfactory. In the Oberland the charges are fixed by a tariff, which will be found in the Introduction to § 24. In the Valais the Cantonal authorities have also undertaken to establish a tariff which has been frequently modified. Travellers should obtain the latest information on the subject through innkeepers. The Valais rules are marked by the mean and grasping spirit which seems characteristic of the proceedings of the local authorities. A traveller arriving with horses hired in an adjoining Canton is liable to have them sent back, in order to force him to engage those of inhabitants of the place where he happens to be. Such is the system of protection carried out to its legitimate consequences.

SECTION 22.

DIABLERETS DISTRICT.

At its western extremity the main range of the Bernese Alps is abruptly cut short by the defile of St. Maurice, which separates the Dent de Morcles from the Dent du Midi, and the lofty range described in § 17, by a trench 8,000 ft. in depth. The *Dent de Morcles* (9,639′) is succeeded by the Grand *Moveran* (10,043′), and this by the many-peaked mass of the *Diablerets*, whose highest summit reaches 10,666 ft. This adjoins the *Oldenhorn* (10,250′), beyond which the range falls away to the E. towards the Sanetsch Pass, which forms the natural limit of this member of the Bernese chain. If the portion of the main range here included be short and of secondary importance, the minor ridges connected with it extend through a considerable portion of the Cantons of Vaud and Fribourg; the chief of them, extending northward from the Oldenhorn, forms the line of demarcation between the Cantons of Vaud and Berne. Apart from the well-known sites at the eastern end of the Lake of Geneva, which may be held to belong to this district, the most attractive head-quarters to the mountaineer will be found in the Val des Ormonds, where fair accommodation is now found at several good country inns and *pensions*. The neighbourhood of Bex abounds in fine scenery, and possesses many attractions for the naturalist; but the situation is rather too hot for the summer season, and mountain excursions are laborious from the long ascent necessary to rise above so deep a valley. Unlike the remaining portions of the Bernese Alps, where German is the native tongue of the inhabitants, French is here the prevailing language, except in the neighbourhood of Saanen and in some valleys of the Canton Fribourg.

Route A.

PARIS TO ORMOND DESSUS, BY NEUCHÂTEL AND LAUSANNE.

	Kilomètres	English miles
Dijon (by railway) .	315	195¾
Dôle	47	29⅓
Pontarlier . . .	94	58¾
Neuchâtel . . .	46	28½
Lausanne . . .	73	45⅓
Vevey	18½	11½
Villeneuve . . .	11	7
Aigle	12	7½
	616½	383¾
Sepey (by road) . .	12	7½
Ormond Dessus . .	11	7
	23	14½

The railway from Paris to Neuchâtel, opened in 1863, is by many degrees the most direct line for travellers from England bound for Central or Southern Switzerland. The scenery, and especially the descent from the Jura towards Neuchâtel, is extremely interesting—best seen by those sitting on the rt. hand going from Paris. It has, however, the misfortune to be subject to the Paris, Lyons, and Mediterranean Company, whose policy it is to disregard all traffic save that of the Marseilles line, with a partial exception in favour of the longer and more expensive route to Switzerland by Geneva. There is but one direct train (the night mail) from Paris to Neuchâtel, fast as far as Dijon, but taking 7 hrs. to perform 119 miles thence to Neuchâtel. Travellers pressed for time may go on without change of carriage direct to Berne or Lucerne, but if bound for Lausanne must descend at the Auvernier station, close to Neuchâtel, and there catch the train to Lausanne, reaching that town about noon. By at once taking the train to Villeneuve, they may thus get to Sion in little more than 20 hrs. from Paris, or, if bound for the Val des Ormonds, may easily reach any of the inns in the upper part of the valley in time for dinner on the day after they have left Paris. Travellers going from Switzerland to Paris are rather better treated, as there is one train that performs the journey in about 13 hrs., and during the summer season they may go the whole way from Berne to Paris, without change of carriage, in about 15 hrs.

It should not be forgotten that the Swiss railways are regulated by Berne time, which is 26 minutes in advance of Paris time, kept on all French railways.

At Dijon the traveller leaves the main line from Paris to Lyons, and follows the branch line leading to Besançon and Belfort as far as Dôle. Here, unless by the night mail, he again changes carriage for the branch to Pontarlier, and reaches the foot of the Jura range at the *Mouchard* station. It was originally intended to carry the railway to Pontarlier by

Salins (Inns: H. des Messageries; Sauvage), a small town, with saline springs producing annually a large quantity of salt, and now frequented for the sake of the baths and a hydropathic establishment opened in 1859. The main line follows a different direction, but there is a branch 5 m. in length leading from Mouchard to Salins. Another longer branch line leads SW. from the Mouchard station to Lons-ne-Saulnier, passing at a distance of 5½ m. *Arbois*, well known for an agreeable, sparkling wine, of much repute in this part of France.

At Mouchard the main line bends SE., and gradually ascends to the central plateau of the Jura, where stands, at 2,854 ft. above the sea, the frontier town of *Pontarlier* (Inn: Hôtel National). The luggage of travellers entering France is examined at the railway station. Near this place one of the highest summits of the Jura, called the *Grand Taureau* (4,350′), commands a wide view, extending from Mont Blanc to the Grand Ballon in the Vosges, but not nearly equal to those gained from the eastern slopes of the Jura which overlook the plain and the lakes of Switzerland, backed by the snowy ranges of the Bernese Alps.

The Jura mountains, though not comparable, in point of natural beauty, even with the secondary ranges of the Alps, present some picturesque scenes, and are interesting to the geologist and the naturalist from the numerous contrasts which they present to the greater mountain region to which they form an exterior belt to the N. and W. In place of the violent disturbances that have uplifted the strata of the Alps, very commonly setting them on edge, or even reversing the natural order of superposition, we here find a series of comparatively gentle undulations, increasing gradually in height as we pass from France towards Switzerland, and, in the intervals, broad and gently-sloping valleys parallel to the general direction of the range, which, after running nearly due N. from the frontier of Savoy, is gradually bent NE., and ultimately tends nearly due E. in the northern cantons of Switzerland. In a few places only the rocky undulations that form the principal ridges are cut through by narrow gorges, through which the streams escape on either side towards France or Switzerland. The highest ridge which faces the plain of Switzerland alone presents a somewhat abrupt aspect, as on that side it descends by an almost unbroken slope to the level of the plain.

The vegetation of the Jura has been the subject of an important work by M. Thurmann, entitled *Phytostatique du Jura*. The prevalence of extensive peat-bogs, which are comparatively rare in the Alps, supplies a home to many Scandinavian species, most of which are found in the colder parts of the British Islands, but are rare, or unknown, elsewhere in Central Europe. Such are *Saxifraga Hirculus*, *Oxycoccus palustris*, *Andromeda polifolia*, *Swertia perennis*, *Alsine stricta*, *Betula nana*, *Scheuchzeria palustris*, and many Carices. Several rare plants are found on the higher calcareous ridges, or on the slopes of the eastern declivity. Of these, *Arabis serpyllifolia*, *Iberis saxatilis*, *Cephalaria alpina*, *Crepis montana*, *Ligusticum ferulaceum*, *Epipogium Gmelini*, *Erythronium Dens Canis*, *Festuca Scheuchzeri*, and *F. pumila*, deserve especial notice.

The high road and the railway to Neuchâtel are carried for a short way along the Doubs, close to the fort of Joux, which guards this entrance into France, and then turning NE. through a defile, pass the Swiss frontier at *Les Verrières* (3,061′), about 7 m. from Pontarlier. Beyond this village the line traverses another narrow gorge, and following the stream of the Reuss, descends to *Motiers*, once the residence of J.-J. Rousseau, and then to *Travers* (2,392′), a village which gives its name to the valley. From this or the following station of *Noiraigne* an excursion may be made to the *Creux du Vent* (4,806′), a mountain nearly level at the top, which derives its name from a singular hollow, nearly 2 m. in circumference and 1,000 ft. deep, lying near to the summit. This is the greatest example of this class of hollow depressions which are characteristic of the Jura, and known as *Cirques Jurassiques*. The effect of the echoes produced by the discharge of a gun into the hollow is said to be extraordinary. In certain states of the weather it is filled by a mass of white vapour, which exhibits a singular agitation, as though it arose from a mass of water in violent ebullition. The pedestrian may descend either to Neuchâtel or to Concise, half-way between that town and Yverdun, being rewarded for his expedition by the glorious views of the lake and the snowy Alps that are gained from all the neighbouring heights of the Jura.

At the *Auvernier* station, less than 3 m. from Neuchâtel, the railway joins the line from Neuchâtel to Yverdun and Lausanne. If anxious to reach the latter city without delay, the traveller will sometimes find it advantageous to descend here, in order to take a train from Neuchâtel which might otherwise

be missed, but if not pressed for time he will do well to proceed to

Neuchâtel (Inns: Bellevue, handsome house, well managed and comfortable, travellers are taken *en pension* both in summer and winter; Grand H. du Lac, formerly H. des Alpes; both on the lake; H. du Lac, small but clean; Faucon; H. du Commerce). The railway station is nearly 200 ft. above the new town. Those who go on foot may pass by a shady walk, avoiding the dusty road. This small town, finely placed on the borders of the lake which bears its name, has acquired a certain importance from the number of public institutions, several of which are connected with the names of its distinguished inhabitants. The Gymnasium contains a Museum of Natural History, formed in great part by the activity of M. Agassiz, who long resided here. A Picture Gallery, in the Musée, contains some good specimens of the modern Swiss school. Private collections belonging to Count Pourtalés and M. Roullet de Mézerac are readily shown to amateurs. The new Observatory, the public Hospital founded by Pourtalés, the Charitable Asylum of David Pury, who bequeathed 160,000*l.* to his native city, the Orphanage, and the Asylum for the Insane built near the town by M. de Meuron, are institutions worthy of a wealthy state, and do honour to the munificence and public spirit of the inhabitants.

The *Lake of Neuchâtel* (Germ., Neuenberger See), about 24 m. long, and from 4 to 6 m. in breadth, is 1,427 ft. above the sea-level, and not more than 488 ft. deep. Its eastern shore is low and monotonous, and the scenery is far from rivalling that of the more famous Swiss lakes; but when viewed from the NW. side, backed by the noble outline of the Bernese Alps which are everywhere visible from the slopes of the Jura, in clear weather even from the windows of the hotels in the town, it forms a beautiful picture. It is traversed twice daily by steamers, which go as far as Morat (Rte. K). The remains of lacustrine dwellings have been discovered at many places on the shore of the lake, especially near Concise, Cortaillod, and Estavayer. M. Desor, the well-known geologist, who has published an account of these remains of an early race, possesses a valuable collection of these objects, which now attract so much the attention of geologists and antiquaries.

Several agreeable excursions may be made from Neuchâtel. To obtain views over the plain of Switzerland and the lakes of Neuchâtel, Bienne, and Morat, it is sufficient to mount the slopes of the Jura by any of the roads or paths that radiate from the town, but the point most frequently visited is the summit of the *Chaumont* (3,845′), reached on foot, or by a good carriage-road, in about 2 hrs. from the town. This is not properly a separate mountain, but rather the SW. end of a continuous terrace-like ridge that extends parallel to the lakes of Neuchâtel and Bienne for a distance of 18 m., gradually rising towards the NE. to its highest point — the *Chasseral* (5,279′) above Bienne. The view from the Chaumont extends from the Titlis to Mont Blanc, and is especially beautiful when the setting sun lights up the snowy chain after the low country is already plunged in twilight. There is a large Pension, close to the top, said to be very well managed. A path through the woods leading up to it, is not quite easily found.

Among the shorter excursions from Neuchâtel, that to the gorge of the Seyon, through which passes the road to Vallengin, may be recommended. The great works connected with the three railway lines that converge near the town, especially the viaduct of Serrières, well deserve examination. There is a railway from Neuchâtel to Chaux de Fonds and Locle, the chief seats of the Swiss watch manufacture. A day may be well spent in visiting those places and the remarkable works on the line. The entire ascent is about

1,700 ft., but the greater portion lies in the space between the town and the station of *Hauts Geneveys*, distant but 3 or 9 m. in a direct line. The ascent is effected by a great zigzag, in which the direction of the train is twice reversed.

Chaux de Fonds (Inns: Fleur de Lys; H. de France; Guillaume Tell; Balances) was not long ago a poor mountain village, 3,274 ft. above the sea, producing little beyond poor crops of barley which ripens with difficulty. The increase of the watch trade has brought extraordinary prosperity to this and the village of *Locle* (Inn: Trois Rois), 5 m. distant. They both of them now surpass in wealth and population most of the towns of the Swiss confederation. Chaux de Fonds in particular is remarkable for the air of comfort and even elegance which characterises the dwellings of the people. Each artisan works at home, and produces but a single part of the watch movement. The division of labour is carried so far, that it is said that 120 men are employed in the production of each first-class repeater watch.

The erratic blocks of granite, and other crystalline rocks derived from the range of the Pennine Alps, which lie scattered on the eastern flanks of the Jura have attracted much of the attention of geologists. According to some writers, they may be traced to a height of about 2,000 ft. above the level of the Lake of Neuchâtel. The largest of these blocks, called Pierre à Bot, is about 2 m. from Neuchâtel, on the rt. of the road to Vallengin. It measures 62 ft. in length by 48 ft. in breadth, and lies 2,247 ft. above the sea, or 820 ft. above the lake. The only agency by which these blocks can have been borne to their present resting-place is that of ice, and the only difference now existing on the subject amongst geologists is between those who believe in the former extension of the glacier of the Rhone to the flanks of the Jura, and those who hold that the plain of Switzerland may at the period in question have been covered with water, and the blocks conveyed from the valley of the Rhone on floating ice-rafts.

The best wines of Switzerland are those grown on the slopes of the Jura. Those of Cortaillod, Neuchâtel, and St. Blaise are especially esteemed.

Passengers from Neuchâtel to Lausanne, or Vevey, may take the steamer to Morat, go by char or omnibus to Fribourg, and thence by rly. (described in Rte. K). The usual and direct course is by rly. from Neuchâtel. After passing *Boudry* and *Concise*, this traverses the famous battle-field of *Grandson*, where 20,000 Swiss utterly routed the Burgundian army of Charles the Bold, from 50,000 to 60,000 in number, and captured a prodigious booty left by their presumptuous enemy. The church of Grandson is one of the most curious of the early Christian churches of Switzerland. The materials appear to have been taken in great part from the Roman buildings at Aventicum. Many remains of antiquity have been found in this neighbourhood, some of them of Roman origin, others more ancient are commonly ascribed to the druidical period. Beyond Grandson the rly. traverses a marshy tract, formed by the continual encroachment of the land upon the shallow bed of the lake, before reaching

Yverdun (Inns: H. de Londres; Croix Fédérale), a small town of great antiquity, the Eburodunum of the Romans (Germ., Yferten), remembered chiefly for the sake of Pestalozzi, who here laboured in the educational experiments to which he devoted his life.

A pleasant excursion may be made to the *Lac de Joux*, lying in one of the most picturesque positions in the Jura range, at 3,310 ft. above the sea. It is best approached from *Orbe* (Inn: G. Tell), once a residence of the Burgundian kings, distant about 7 m. from Yverdun, or 2 m. from the Chavornay station. The distance from Orbe to *Le Pont* (Inn: La Truite), at the N. end of the lake, is only 13 m., but the

diligence employs from 4 to 5 hrs. in the ascent. Above the lake are two of the highest summits of the Jura—the *Mont Tendre* (5,512′), and the *Dent de Vaulion* (4,877′). The NW. side of the latter mountain is cut away in a sheer precipice overhanging the valley of the Orbe. In addition to the panoramic view obtained from other points in the range, many of the peaks of the South Savoy Alps, and the higher summits of the Pelvoux group in Dauphiné, may be discerned in clear weather. Some caution is requisite in wandering amongst these mountains. The limestone rocks abound in narrow fissures partially concealed by herbage, and, what is still more dangerous, wells are dug to provide water for cattle, and imperfectly covered over to save it from evaporation. In one of these an English traveller was drowned in 1837.

The rly. from Yverdun traverses a fertile country, amidst agreeable scenery which presents no object of much special interest. After passing the *Chavornay* station, the rly. ascends a little, and having traversed two short tunnels enters the valley of the *Venoge*, through which it descends gently towards the Lake of Geneva. Near the *Cossonay* station the village of that name is seen picturesquely placed on a hill on the rt. bank of the stream, and about 4½ m. farther, at the *Bussigny* junction station, the rly. joins the main line from Geneva to

Lausanne (Inns: H. Gibbon; Faucon; both good; H. Bellevue, well situated, quiet, and reasonable; H. Richemont, near the rly. station, well spoken of; H. and Pension Belvedere, well situated; H. du Grand Pont, commercial). This town, and the road by Vevey and Villeneuve to Aigle, are described in § 18, Rte. A, of this work. Brief notes of the points most interesting to travellers are here inserted.

Objects of interest at Lausanne:—Cathedral; Musée Arlaud, good collection of Swiss pictures; Musée Cantonal, public library.

At *Ouchy*, 1½ m. from the town (Inns: Beaurivage, first-rate in all respects; H. de l'Ancre, second-rate; Pension Bachoffner, good), is the port of call for the lake steamers.

The Signal, 2 m. from the town, on the slope of Mont Jorat, commands a fine view of the lake—not, however, extending to Mont Blanc.

The road from Lausanne to Fribourg is described in Rte. K.

Vevey (Inns: Grand Hôtel, ½ m. from the town on W. side, very large, first-rate; Trois Couronnes, very good, not dear; H. du Lac, new house, good; H. Senn; H. Leman; all on the lake, commanding beautiful views; Trois Rois; Faucon; both fair and cheap; Croix Fédérale; Poste). The church of St. Martin is worth a visit. The road from Vevey to Fribourg is described in Rte. I. that to Thun in Rte. G.

Montreux. The path by the Dent de Jaman to Château d'Oex is described in Rte. H. Near the *Vernex* station is the Hôtel de Montreux, well kept by Mdlle. Loring, and the H. du Cygne. 2 m. beyond Vernex is the Castle of Chillon, interesting from its beautiful position, and the associations connected with it.

Villeneuve (Inns: H. du Port, clean and reasonable; Aigle Noir), at the end of the lake, the port for the steamers. Close at hand is the large Hôtel Byron, in a fine situation, good and reasonable.

Aigle (Inns: Beausite, close to the station, new and good; H. du Midi; H. Victoria). Here travellers bound for the Val des Ormonds leave the railway.

Aigle is connected with the district called Les Ormonds by a narrow glen traversed by La Grande Eau, a rapid torrent that drains the upper valley. Through this glen an excellent road as far as Sepey has been open for many years to Château d'Oex (Rte. B). The new part of the road between Sepey and the latter village is now open for traffic. This has shortened by nearly 40 miles the dis-

tance by carriage-road from Thun to Bex, and all parts of the Canton Valais. The road from Aigle to Sepey along the steep N. slope of the valley of the Grande Eau, involving an ascent of more than 2,000 ft. in 7½ m., is a creditable piece of engineering, and the scenery, which is best seen in descending the valley, with the Dent du Midi in the background, and the Dent de Chamossaire rising on the opposite side of the deep ravine, is striking.

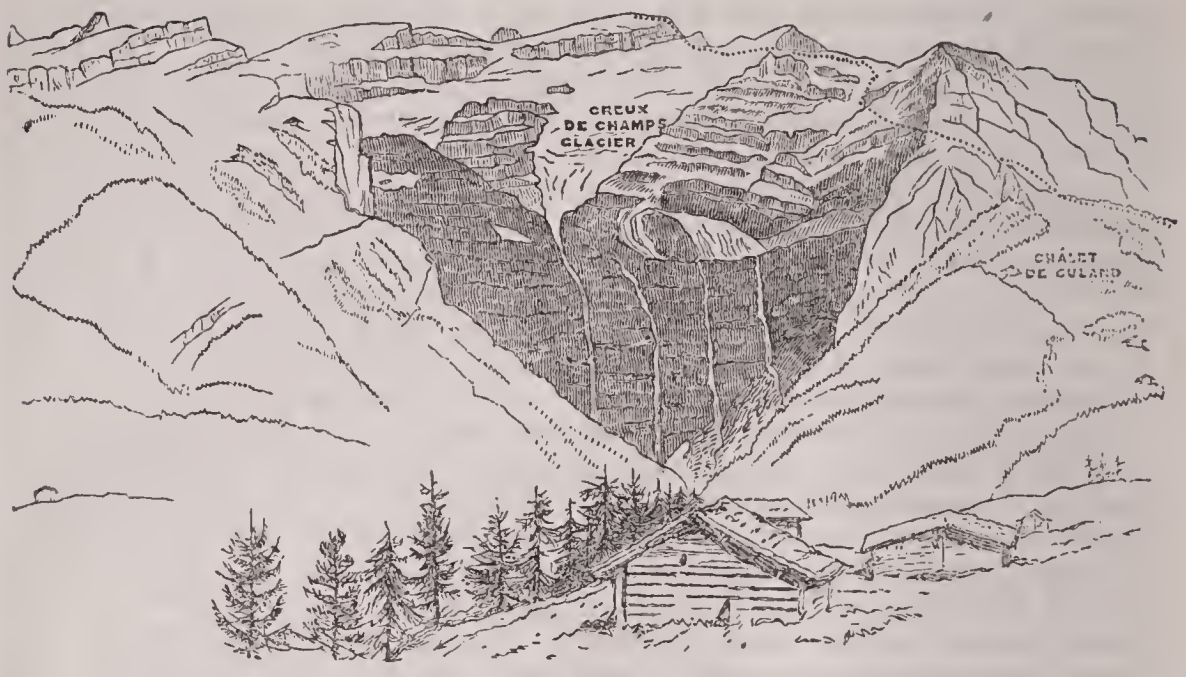
Sepey (Inns: H. des Alpes, good; H. de-Ville, rough, cheap for persons remaining *en pension*) is the chief village of the district, and sometimes called Ormond Dessous. The glen of the Grande Eau here widens out into a broad pastoral valley, whose brilliant green slopes are belted round by the forests that occupy the middle region of the surrounding mountains. The *Val des Ormonds*, as the district is commonly called, is inhabited by an active race of mountaineers, famed as rifle-shots. The agreeable scenery of the main valley, rising to grandeur towards its head, the beauty of the Alpine views obtained from the surrounding summits, and the numerous inns and pensions affording fairly good accommodation at moderate rates, make this an eligible halting-place for those who would pass some time in this part of the Alps. Sepey is much inferior in attractions to the places lying higher up in the valley, but is the most convenient starting-point for the ascent of the *Tour d'Ay* (7,818′), or the *Tour de Mayen* (7,622′). The latter, though somewhat lower, commands a more extensive view of the Lake of Geneva.

[Rather more than 3 m. above Sepey, on the new road from Château d'Oex, after passing the ruins of the Castle of Aigremont, is *Comballaz* (4,416′), where good accommodation at very reasonable prices is found at the Pension Roch (charges, 5 fr. a day without wine; children 2½ fr.; servants, including wine, 4 fr.). The landlord keeps ponies for mountain excursions. Of these the most frequently made is to the mountain lake of *Lioson*, 6,135 ft. above the sea. The *Pic de Chaussy* (7,799′), immediately over the lake, may be reached in little more than 1 hr., and rewards the ascent by a noble view of the Diablerets group. The Pension Roch is not a very convenient stopping-place for passing travellers, as it is hard to obtain food except at fixed hours.]

The ascent to the head of the Val des Ormonds is made from Sepey by a rough char-road on the rt. bank of the Grande Eau. The road passes opposite the village of L'Eglise with a country inn, and about 7 m. above Sepey comes to an end at

Ormond Dessus, also called *Plan des Iles*, an open tract of pasture with many scattered groups of houses, surrounded by high mountains. Here, at 3,832 ft. above the sea, a very good hotel and pension (H. des Diablerets) has been opened within the last few years. Near it is another small and very cheap inn, Au Chamois. Though at times rather hot, this affords the best head-quarters for a traveller wishing to explore this portion of the Alpine chain, and to enjoy at his ease the pure air and beautiful scenery of the neighbourhood. Seen from the N. side, the Diablerets present a very different aspect from that which they present towards the S., where they rise in formidable precipices above the path of the Col de Cheville (Rte. D). Beyond Les Iles, and less than 1 hr. distant, the Eau Noire is seen to issue from a vast amphitheatre called *Creux de Champs*, formed by steep precipices of limestone, surmounted by snowfields and glaciers that are drained by streams that fall down the face of the rock. But few spots can be named in the Alps that so much resemble the characteristic *cirques* of the Pyrenees.

The annexed woodcut (from M. Ulrich) gives a correct representation of the chief peaks visible from Ormond Dessus. The dotted line shows the



THE DIABLERETS.

direction taken by that gentleman in his ascent of the Diablerets.

The excursion most commonly made from Ormond Dessus is the ascent of the *Chamossaire* (6,932′), the highest point of the ridge separating the valley of the Eau Noire from that of the Grionne leading to Bex. The summit is as easily reached from Sepey or Comballaz, and is accessible to ladies and moderate walkers. There are two paths; by the longer one visitors may ride for 3 hrs. from the Hôtel des Diablerets, leaving the horses at some châlets close to a little lake. Thence ½ hr. or ¾ hr. suffices to reach the top. The range of Mont Blanc forms the most striking object in the view from this as well as all the other summits in this district.

The ascent of the *Diablerets* (10,666′) was effected from this side in 1850, by MM. Ulrich, G. Studer, and Siegfried, and is described in the second series of 'Berg- und Gletscher-Fahrten.' The summit has been frequently reached from the NE. side by the Sanfleuron Glacier (Rte. E), and of late years from Anzeindaz (Rte. D). The way from Ormond Dessus by the Creux de Champs is probably the most interesting, but also the most difficult. M. Ulrich describes a portion of the ascent, in passing from the higher Rocher de Culand to the main mass of the mountain, as somewhat dangerous from the steepness of the ice-slope that has to be surmounted. The expedition is evidently one that requires some training, good guides, and the use of the rope and ice-axe. It would be expedient to sleep at the highest châlets at the base of the Rocher de Culand, 1½ hr. from Les Iles, as the distance to be traversed is considerable.

The highest peak, sometimes called La Grosse Tête des Diablerets, which is but imperfectly seen from Plan des Iles, immediately overhangs, at a height of nearly 6,000 ft., the Lake of Derborence (Rte. D). It affords probably the finest panoramic view of the chain of the Pennine Alps from the N. side, corresponding in many respects with that from Mont Emilius (§ 14). The greater part of the view from the Diablerets may be gained, with no other difficulty than a scramble up a steep rocky chimney called Borne de Culand, by ascending the W. or lower of the two summits called *Rochers de Culand.* This, which is 9,185 ft. in height, may be reached in

about 5 hrs. from the Hôtel des Diablerets.

The limestone of the Diablerets abounds in nummulitic fossils.

The routes from Ormond Dessus to Saanen and to Bex are described in this section. (See Rtes. C and F.)

The N. summit of the Diablerets group, the *Oldenhorn* (Fr. *Becca d'Audon*), attains 10,250 ft. The summit may be reached in 6 or 7 hrs. from Ormond Dessus by the Châlets d'Audon, lying in an alpine glen of the same name. (See Rte. E.)

Of the other excursions from Ormond Dessus, the most interesting is the ascent of the *Tête du Moine* (7,713′). It lies about due N. of the hotel, and is easily reached in 3½ hrs. The view on a clear day is of the highest order.

Route B.

ORMOND DESSUS TO CHÂTEAU D'OEX AND BULLE.

5 hrs. to Château d'Oex. Thence to Bulle, 6 leagues by carriage-rd., 7½ hrs. by Charmey.

The most direct and interesting way from the Val des Ormonds to Fribourg and Berne is by Château d'Oex. Diligences run twice daily by the new and picturesque carriage-road by Combal-laz in 6½ hrs. from Aigle to Château d'Oex. Starting from Plan des Isles, the traveller descends the valley as far as Comballaz (Rte. A), about 6 m. distant by mule-path. To reach that place by carriage it is necessary to return near to Sepey, and then ascend by the new road. The way then lies nearly due N., and in about 2 m. reaches the hamlet of *Mosses*, lying on the plateau which separates the Val des Ormonds from the valley of the *Hongrin*, the stream which drains the mountain lake of Lioson. More than a mile farther is the solitary and poor inn of *Lécherette* (4,519′), whence a path leads in 4 hrs. by the Col de Chaude to Villeneuve (Rte. H). The way from Lécherette to Château d'Oex quits the valley of the Hongrin, and traverses pastures to a low col overlooking the pretty valley of *Etivaz*, where a mineral spring of sulphureous water supplies baths of some local celebrity. A rather rapid descent through that valley leads to the hamlet of Moulins, on the high road, about 1¼ m. from *Château d'Oex* (Inns: H. Berthod, well situated; Ours; Maison de Ville; and several *pensions*), a small town on the rt. bank of the Sarine, on the road from Thun to Vevey, 3,261 ft. above the sea.

Those who intend to follow the high road to Bulle, described in Rte. G, may avoid Château d'Oex, turning to the l. at Moulins, and following the road to Montbovon; but a pedestrian, desiring to see something of the unfrequented valleys of this part of Switzerland, may with advantage take a somewhat longer route, passing by Charmey. For this purpose he should follow the road to Saanen for 3 m. from Château d'Oex as far as the hamlet of *Flendru*, whence a path leads northward through a lateral glen to the *Col de Philisma* (5,010′), and thence to the valley of the *Jogne* (Germ. *Jaun*), whose numerous and thriving population produce the finest quality of Gruyères cheese. The chief commune, called *Charmey*, consists of 3 hamlets, the largest of which—Fédières (2,956′)—is about 4 hrs.' walk from Flendru. By a détour, for which the assistance of a guide is indispensable, the naturalist may on his way to Charmey visit *Morteys*, a hollow basin in the limestone rocks at the S. base of the *Dent de Branleire*, (7,743′), one of the highest of the Fribourg Alps. This spot is full of interest to the botanist, the entomologist, and the geologist.

The dialects spoken in this part of the Canton Fribourg have attracted the attention of philologists. In the valley of the Sarine the patois is akin to the Romansch spoken in the Grisons, while Swiss antiquaries hold that the population of the valley of the Jogne (also called *Val de Bellegarde*) is of Scandinavian origin. This

valley and its affluents contain much pleasing scenery, little known in Switzerland, and scarcely ever seen by a foreigner. A lover of retirement, who could content himself with country fare, might spend, with satisfaction, several weeks in exploring the neighbourhood.

[About 2 hrs. above Charmey is the village of *Jaun* (Fr. *Bellegarde*), (3,324′), with an inn—Im Hof—and the remains of a mediæval castle, near to a pretty cascade 200 ft. in height. Half an hour farther the valley turns abruptly to the S., while a path mounting to the E. leads in 4 hrs. through a singular cleft in the mountain, called *Klus*, to Boltigen in the Simmenthal. Another path ascends through the valley to *Abländtschen* (4,275′), the highest village. Thence to Zweisimmen by the pass of the *Schlündi* (5,610′) is a walk of 3½ hrs., or to Saanen by the *Laucheren* (5,883′) about 3 hrs.]

The mule-path from Charmey joins the char-road leading from Val Sainte (Rte. L) to Bulle, at Crésuz, ¾ hr. from Fédières. Bulle may be reached in 1¾ hr. farther, passing *Mont Salvens*, whose castle commands a fine view, and crossing the Sarine ½ hr. below *Tour de Trême*, where the traveller rejoins the high road from Thun to Vevey.

Route C.

ORMOND DESSUS TO BEX.

Distance, about 5 hrs.

An easy ascent of 1 hr. leads from the Hôtel des Diablerets (Rte. A) to the *Col de la Croix* (5,705′), commanding a fine view of the Val des Ormonds and the Diablerets on the one side, and on the other of the valley of the *Grionne* that leads down to the Rhone, with the Val d'Illiez, backed by the Dent du Midi in the background. It is possible to choose between a path on the l. side of the valley, passing *Taveyannaz* and *Grion* (Rte. D), and another on the rt. side, along the ridge whose highest peak is the Chamossaire, by the village of Arveyes. The valley of the Grionne abounds in *pensions*, where many Swiss visitors enjoy pure air and fine scenery at very moderate rates. One of those most recommended is the Châlet de Villard, kept by M. Roux, a retired officer. It commands a beautiful view, and is within 2 hrs. of the summit of the Chamossaire, and 3 hrs. from Plan des Iles. The accommodation is somewhat rustic, but tolerably good; charge, *en pension*, 4½ fr. a day.

Bex (Inns: Grand H. des Salines, with baths; Union; H. des Bains) is noticed in § 20, Rte. A. Much frequented by invalids for the sake of the baths.

[The Editor has been favoured, by M. de la Harpe, of Lausanne, with notes of two expeditions of high interest, though very rarely undertaken by strangers. Owing to the low level at which the village stands, either ascent from Bex is long and laborious, and it is a better plan to sleep at some of the higher châlets. A guide well acquainted with the ground is indispensable, especially for the Dent de Morcles.

The *Grand Moveran* (10,043′) is most conveniently approached from the W. side, by the Châlets de Nant above Bex. You mount thence direct to the *Frête de Saille*, a col traversing the ridge between the Grand and Petit Moveran. It is necessary to descend a short way on the opposite side, in order to attack the summit from the E. side. This is reached by climbing over rocks and steep slopes of débris.

The *Dent de Morcles* (9,639′), though a little lower, offers a still finer view than the Moveran, and one that must be counted among the grandest and most varied in the whole range of the Alps. Three different ways, joining each other below the summit, are offered to the choice of the mountaineer.

Eaeh of them offers attractions of its own, but the most agreeable is to mount from Bex by Frenières to *Les Plans* (about 2½ hrs.), where there are several *pensions*, at which lodging may be had for the night. A steep path, through a picturesque glen, leads up to the *Glacier de Martinet*, lying close under the precipitous W. face of the peak. The summit of this small glacier, reached in 4 hrs. from Les Plans, commands a noble view of the Lake of Geneva, and a part of the range of the Pennine Alps. The traveller now enters upon the Grand-vire, a remarkable channel in the rock, cut into the S. base of the Dent de Morcles, and affording the only means of access to the summit. It takes nearly 2 hrs. to traverse the Grand-vire, and 1 hr. more to reach the higher of the two rocky teeth forming the summit of the mountain. The climb is steep, but with a steady head and a competent guide there is no danger. Fully 7 hrs., exclusive of halts, are required for the aseent from Les Plans.

Another way is to mount from the Baths of Lavey (§ 18, Rte. A) by the hamlet of Morcles to the châlets of Haut de Morcles, reached in 4 hrs. A steep ascent, keeping well to the E., now leads in 2½ or 3 hrs. to the Grand-vire, which is entered at a point higher up, and farther E., than when it is approaehed from the Glacier of Martinet. In 2 hrs. more the summit is gained.

A third way, especially interesting to botanists, is from the village of *Fouly*, on the rt. bank of the Rhone, near Martigny. A rather long but easy ascent leads to the Châlets de Fouly, standing near two small lakes, a locality famous for rare plants. From hence there is no difficulty in joining the way from Lavey and Morcles below the point where it enters the channel of the Grand-vire.]

Route D.

BEX TO SION, BY THE COL DE CHEVILLE.

	Hrs.' walking	English miles
Grion (by road) . . .	1¾	5
Sous-la-Lex (by foot-path)	1¾	4½
Anzeindaz	1	2½
Col de Cheville . . .	½	1¼
Derborence . . .	1	2½
Chapelle de St. Bernard .	2½	6¼
Sion	2	6
	10½	28

New road to Grion; thence, mule-path. Charge for a horse, 20 fr.; for a guide, from 12 to 15 fr. The distanee being rather considerable, some travellers sleep at Grion, or else hire a vehicle from Bex to that village; charge, 8 fr. This is, in great part, a very interesting pass, but the descent from Derborenee towards Sion is long and comparatively dull. Some travellers prefer to make an excursion to the summit of the Col and return to Bex, whence Sion may be reached by railway in about an hour and a half, starting at 8.35 P.M. In this case they lose one of the most striking scenes if they omit to descend on the E. side of the Col as far as the Lac de Derborence.

There is a good road from Bex as far as

Grion (Inns: Croix Blanche; Pension Saulet; both tolerably good, homely, and cheap). 'A mule may be hired here as far as the Col for 7 fr., with 1 fr. bonnemain.'—[M.] Above Grion the path, which for some distance is practicable for rough country chars, ascends very gradually along the N. slope of the valley of the *Avençon*. The way lies amid green pastures, broken here and there by clumps of pines, with frequent views of the imposing precipices of the Diablerets and the Moveran, or in the opposite direction across the Valley of the Rhone to the Savoy Alps. After about 1 hr. the track crosses the Avençon, and begins to ascend more steeply through a pine forest, above which it returns to the rt. bank of the stream,

and reaches the beautifully-situated châlets of *Sous-la-Lex*. Bearing a little to the l., the way now lies through a narrow ravine, and after a steep ascent of about 1,400 ft., attains the châlets of *Anzeindaz* (6,224′), the highest on this side of the Col. The Alpine pastures above these châlets and the stony slopes at the base of the Diablerets are extraordinarily rich in rare plants. The botanist may find tolerable night-quarters in one of the châlets, but he should take provisions, as little food is to be found here. *Ranunculus pyrenæus*, *Viola cenisia*, *Crepis pygmæa*, *Hieracium breviscapum*, and *H. speciosum*, are amongst the rarities of this locality. The geologist may find many fossils of the Gault period. From these châlets the highest peak of the Diablerets (Rte. A) may be reached by a rather difficult climb of 3½ hrs. After mounting over steep débris to the foot of the precipitous rocks forming the peak, it is necessary to bear to the W., and continue the ascent by the clefts and ledges of the calcareous rock. The descent requires much steadiness, and a good guide is necessary.

A gentle slope of alpine pasture leads in ½ hr. from the châlets to the summit of the *Col de Cheville* (6,680′), and from a slight eminence to the rt. the traveller may gain a fine view to the E., extending to the Monte Leone, and of the precipices of the Moveran to the S. The descent on the E. side of the Col lies down a steep rocky slope, first to the rt. and then to the l., the track being ill-marked till it reaches the Châlets de Cheville (5,722′). The path, which now lies in the territory of the Canton Valais, descends steeply through stunted pines, bearing to the rt. till it reaches the châlets of *Derborence* (4,711′), close to a little lake bearing the same name. This lake was formed by one of the falls of the Diablerets, two of which are amongst the most remarkable catastrophes of which an authentic record has been preserved. The first bergfall occurred in 1714. A huge mass of the mountain, after giving warning by loud subterranean groanings continued for two days, fell with a terrific crash, destroying 55 châlets, and whatever men and cattle had not been removed to a distance. The story of the one survivor who worked his way out, after three months' interment under the mass of rocks that had but partially crushed his châlet, and of his being taken for a ghost by his friends on his reappearance in the valley below during the following winter, is familiar to most readers of alpine literature. Warned by the experience of their fathers, the herdsmen made haste to retreat with their cattle, when, in 1749, new threats were heard to issue from the mountain. Only five Bernese, working at a sawmill two leagues lower down in the valley, failed to retreat in time, thinking themselves secure at so great a distance. The bergfall came, covering a square league of country with its ruins, and scattering blocks far and wide. Under some of these the five men, who were never heard of again, must have met their fate.

For several miles from Derborence the path winds amongst the fragments of rock that cover the upper part of the valley. About ¾ hr. from the lake the track crosses the *Lizerne*, and is thenceforward carried along the l. bank of that stream, at first following its course, and then gradually rising, while the torrent descends through a deep and narrow ravine. Here the track is carried for 2 m. along a mere ledge, sometimes artificially hollowed into the rock, sometimes supported by masonry overhanging the precipice, which in some places is more than 1,200 ft. in depth. From the narrow valley, enclosed between high mountains, whose dominant peaks are the *Haut de Cry* (9,698′) on the W., and *La Fava* (8,589′) on the E., glimpses of the surrounding scenery are obtained from time to time, but it is not until after traversing a fine beech wood, and reaching the little

chapel of St. Bernard, that the traveller gains an extensive view over the valley of the Rhone, and the range of the Pennine Alps. Less than a mile farther is the village of *Avent*. The slopes leading down to the valley of the Rhone are very hot in the daytime, though trees give some shade from the sun. Rather more than 3 m. from Avent the high road of the Simplon is reached, close to the bridge over the Morge, 2 m. W. of *Sion* (Inns: Poste; Lion d'Or; both good), described in § 21, Rte. A. In fine weather, persons used to mountain walking do not require a guide for this route, but the way is not always easily traced on the E. side of the pass, and there is not a house between Derborence and Avent, so that it would be imprudent to go without one in unsettled weather.

Route E.

SION TO SAANEN.

The most direct way from Sion to Saanen and the Simmenthal is by the Sanetsch Pass; this is passable for mules, and in fine weather the mountaineer may go without a guide. The Gelten Pass is far less easy of access, involving glacier and rock difficulties, and requires good guides, who are not easily to be found.

1. *By the Sanetsch Pass.*

	Hrs.' walking	English miles
Pont Neuf . . .	2¼	6
Sanetsch Pass . .	3	7½
Gsteig	3½	8¾
Saanen . . .	3	9
	11¾	31¼

Mule-path from Sion to Gsteig; char-road thence to Saanen. It is a long day's walk to or from Saanen, but a char may be taken between that place and Gsteig—price, 8 fr. To see the scenery to the best advantage, this pass should be taken from the N. side; but as the same remark applies to most of the passes leading from the Canton Berne into the Valais, it is not always possible to arrange the route in the best way to suit each pass.

For about 4 m. from Sion the way to the Sanetsch lies amidst vineyards and narrow lanes, and it is easy to take a wrong turn in ascending. After passing Ormona, a hamlet buried amid walnut-trees, the way mounts to Granois, and redescends to *Chandolin*, the last village on this side of the pass, beyond which the traveller cannot count on finding bread or wine till he reaches Gsteig, 7½ hrs. distant. Soon after leaving the village the path reaches a small chapel, commanding a view of the valley of Nendaz, on the opposite side of the Rhone, and then enters the ravine through which the *Morge* descends from the Sanetsch Pass. The slaty rocks hereabouts have been extensively eaten away by the action of the elements, leaving here and there projecting shattered masses, which produce a fine effect when seen through the pine forest. About 1 hr. above Chandolin a solid stone bridge, called *Pont Neuf*, is thrown over the Morge at a great height above the stream. The way lies now for some time along the rt. bank. To the rt. is seen a wild glen, leading to the Gelten Pass (see below). After returning to the l. bank of the Morge the track passes two groups of châlets, and then by a steep ascent in zigzags reaches the *Sanfleuron* châlets (6,785′), the highest in the valley, commanding a fine view over the opposite ranges S. of the Rhone. A hay bed and the usual châlet fare may be found here by travellers wishing to make the ascent of the *Diablerets* (10,666′) or the *Oldenhorn* (10,250′). Both of them are moderately easy of access by the *Sanfleuron Glacier*, which descends to the E. and terminates near the top of the pass, about ½ hr. above the châlets. The middle region of the glacier is a good deal crevassed, but seems to offer no serious difficulties. The Diablerets is decidedly better situated for a panoramic view than the Oldenhorn. Mr. Hinchliff has given, in the first series

of 'Peaks, Passes, and Glaciers,' an account of an ascent of the latter peak by a nearly direct course from Gsteig. On that occasion, as well as in the ascent of the Diablerets, recounted by M. Ulrich, the descent was effected by the Sanfleuron Glacier.

It is said that a pass may be made across the glaciers on the W. side of the Arbelhorn direct to Lauenen, but no such pass seems to be known in the valley of Lauenen.

The *Sanetsch Pass* (7,369′), marked by a cross, and therefore called Kreuzboden, is little more than ½ hr. above the châlets. The summit forms a nearly level plateau, or trough-shaped depression in the chain, three or four miles in length, whereon patches of snow often remain throughout the summer. The pass lies between the *Arbelhorn* (9,980′) on the E., and the *Sanetschhorn* (9,679′), which intervenes between it and the Oldenhorn on the W. On reaching the N. verge of the plateau of Kreuzboden it is necessary to bear to the rt. or NE., when the traveller suddenly gains a fine view over the Gsteig Thal and the course of the Sarine. 1½ hr. fully suffices for the descent, but 2½ hrs. are required to reach this point from Gsteig. The path is carried down steep faces of rock, being partly excavated and partly sustained by masonry, somewhat after the fashion of that of the Gemmi, save that it is not nearly so well kept. Below the base of the rocks, and about 2 m. from Gsteig, there is a very fine waterfall of the Sarine, a few hundred yards from the path, and well deserving a visit. Those intending to pass the Chrinnen Furke to Lauenen (see below) may turn aside near the waterfall, and, mounting by a path to the rt., will join the track from Gsteig near the summit of the pass.

Gsteig (Inn: Bär, rough, dirty, and dear, only two beds in one room)—the Freneh name is Châtelet, but German is the language of this and the adjoining valley of Lauenen—is a scattered village about 3,940 ft. above the sea, on the l. bank of the Sarine, finely situated in the midst of pastures and pine forest, surmounted by the precipitous faces of the surrounding limestone peaks. There is a very good char-road down the valley, a distance of 9 m., to Saanen. About half-way is the opening of the lateral valley of Arnen (Rte. F), and a little farther a bridge over the Sarine, by which the road crosses to the l. bank, and descends to

Saanen—Fr. *Gessenay* (Inns: Grosslandhaus, clean and reasonable; Ours), on the high road from Thun to Vevey. (See Rte. G.)

2. *By the Gelten Pass.* On the old maps, and in local works on the topography of Switzerland, a pass is laid down between Sion and Lauenen in the Canton Berne, lying between the peaks of the Arbelhorn and the Wildhorn, in the depression occupied by the Gelten Glacier. The pass, if it ever was frequented, had become unknown, and even lost to local tradition, when MM. G. Studer and Ulrich effected a passage from the N. side in 1852, and descended by the valley of the Morge to join the track from the Sanetsch Pass. Again, in 1858, the first-named traveller, with two companions, completed the passage by what appears to have been the ancient course, descending on the S. side by the Sionne valley, which opens into the valley of the Rhone at Sion. This route trenches upon the portion of the Bernese Alps described in the following section, but as it leads directly between Sion and Saanen it could not conveniently be inserted elsewhere than here. The pass may much better be attempted from the N. side than from Sion. The descent of the rocks above the Rothe Thal, especially to persons not well acquainted with the way, might be a matter of difficulty and even danger. In the following brief notice the traveller is supposed to start from Saanen. A char-road leads from Saanen through a narrow and very picturesque glen 6 m. in length to the pretty village of

Lauenen (Inn: Bär, rustic, but clean and not uncomfortable), beautifully situated at a height of 4,134 ft., in the midst of an amphitheatre of high peaks. In 1852 M. Studer found a good guide here in the person of Christian Brand, and in 1858 another, equally active, but not quite so judicious, in Johann Peter Würsten. The distance to Sion being from 12 hrs. to 13 hrs., exclusive of halts, it is expedient either to sleep at the Gelten châlets, or to start from Lauenen some time before daylight. The head of the valley above Lauenen is enclosed between steep walls of rock, above which are gentler slopes that lead up to the snow-fields, and to the extensive *Gelten Glacier*, which fills the background in the view towards the S. The best way to reach the glacier is by mounting the slopes to the E., and then bearing S., above the wall of rock that overlooks the bottom of the valley. 1¾ hr. are required to reach the Kühdungel Alp, a group of châlets near which a torrent descending from the glacier shoots over the edge of the precipice into the valley below. The cascade is called *Dungelschuss*. The path is thence carried along limestone ledges, and in one place, called Geltentritt, a ladder fixed to the rock enables the herdsmen to reach the uppermost pasture and châlets of the *Gelten Alp*, about 2¼ hrs. from Lauenen. There is another way, rather easier, but ¼ hr. longer, which keeps to the bottom of the valley till under the Gelten Alp, to which the ascent is effected by the rt. bank of the Geltenbach. This way passes near to a finely situated Alpine lake, the *Lauenen See*. M. Studer strongly advises travellers who may not attempt any more adventurous expedition to make the excursion from Lauenen to the Gelten Alp and Rothe Thal by the Kühdungel Alp, returning by the Lauenen See—in all about 7 hrs.' walk.

In less than 1 hr. from the Gelten Alp the traveller reaches the *Rothe Thal*, a remarkable hollow in the midst of the wildest imaginable scenery. In allusion to a vague superstition which makes it the home of troubled spirits, it is also called by the herdsmen, Gspenster Thal. This hollow is the filled-up bed of a small lake, surrounded by nearly vertical precipices of a reddish colour, which are surmounted by towers and pinnacles of ice, forming the lower edge of the Gelten Glacier. The precipices surrounding the Rothe Thal on the E. and SE. sides are fully 1,000 ft. in height, and the constant fall of blocks of stone or ice makes it unsafe even to approach their base. Towards the SW., however, the rocks are less lofty, and a branch of the Gelten Glacier descends in a steep ice-fall nearly to the level of the Rothe Thal. It may be possible, though far from easy, to ascend by this ice-fall, and so reach the upper level of the glacier, but another way is taken by the chamois hunters, who are usually far more skilful as cragsmen than upon the ice. The rocks on the E. side of the hollow form the base of the *Hahnenschritthorn* (9,319′). This is a promontory projecting northwards from the *Wildhorn* (10,722′), the highest summit of this group (see § 23). Towards its northern end, on the extreme left of the traveller, looking up the Rothe Thal, the range of rocks becomes less steep, and though apparently inaccessible when viewed from a distance, may be scaled without danger by a steady climber. On attaining the summit of these rocks it is necessary to pass along a steep slope of compact débris, traversed by streams which cut deep furrows in its face, along the top of the precipices of the Rothe Thal. This passage is called Hahnenschritt by the few chamois hunters who come so far in search of game. The ascent is continued by the slopes that flank the Gelten Glacier and by the moraine, until the ice is finally attacked at a high level, from whence gentle snow-slopes, broken by few crevasses, lead in about 1 hr. to the *Gelten Pass* (9,285′), lying immediately W. of the Wildhorn, and commanding a view of the Pennine

Alps, in which the Mont Blanc de Cheillon, the Rouinette, and the Grand Combin, are the most conspicuous peaks. In the ascent is seen a depression in the ridge connecting the peak of the Wildhorn with the Hahnenschritthorn, over which there is a practicable pass to the *Dungel Glacier*, lying on the E. side of the latter mountain. The ridge of the Gelten Grat extends W. from the pass, covered with glacier and névé on its N. slope, but broken away in steep faces of rock on its S. side which overlooks the deep gorge of the Grandes Gouilles. A narrow and steep ice-stream flows down towards the head of the Grandes Gouilles from the upper névé that lies on the S. side of the pass. This, which is called *Glacier de Morzé*, affords the only apparent way for effecting a descent to the valley of the Morge. This is by no means easy, and varies of course according to the state of the glacier. The path from the Sanetsch Pass to Sion is joined about 1 hr. above the Pont Neuf, or rather more than 3 hrs. from Sion.

The traveller who would make his way from the Gelten Pass to Sion by the *Sionne* valley must cross the ridge connecting the Wildhorn with the *Cretabessa*—the highest point in the steep range dividing that valley from the Morge. This was effected, not without difficulty, in 1858, by crossing the head of the Glacier de Morzé and making a circuit round a steep ridge of rocks descending from the Wildhorn. The crest of the ridge was then attained without further difficulty, and the descent to the Sionne valley, though steep, gives no trouble to the practised mountaineer. M. Studer reckons the second pass as 600 or 700 ft. higher than the Gelten Pass. The descent to Sion, passing the village of *Arbaz*, where some refreshment may be obtained, does not appear to be interesting.

The Wildhorn may be ascended from Lauenen, but more easily from An der Lenk. (§ 23, Rte. E.)

Route F.

SAANEN TO ORMOND DESSUS.

There are three ways leading from Saanen to the Val des Ormonds (Rte. A), all of them passing through fine scenery and easy of access.

1. *By the Lake of Arnen.* 4½ to 5 hrs.

About 4 m. from Saanen on the road up the Gsteig Thal the road crosses the Sarine to the l. bank, and soon after reaches the opening of the *Arnen Thal*, a lateral glen, near the head of which, 2½ hrs. from Saanen, is the *Arnen See*, a pretty lake about ½ m. in diameter, 5,072 ft. above the sea. Above the lake a low ridge, partly covered with pine forest, leads in little more than 2 hrs. to Plan des Iles. Another path leads to Etivaz and Château d'Oex.

2. *By Gsteig and the Col de Pillon.* 5¼ hrs.

Though rather longer than the last, this way is much more frequented, the path being better suited for beasts of burden. For the first 9 m. it lies by the char-road to *Gsteig*. (See last Rte.) Beyond the village the horse-track traverses marshy meadows, passing near a waterfall, and, after an ascent of 1¼ hr., reaches the *Col de Pillon* (Germ. *Pillenberg*), only 5,092 ft. in height, the lowest point in the ridge which here divides the Cantons of Vaud and Berne. N. of the Col, and about 550 ft. higher, is the mountain-lake of *Rettau*, said to deserve a visit. On the S. side are the bold rocks which form the base of the Oldenhorn, whose summit is not seen. After a short descent a very pleasing view of the Val des Ormonds, with its green pastures and scattered groups of châlets, opens out. Several of these are passed, and in 2¼ hrs. from Gsteig the traveller reaches the hotel at Ormond Dessus.

3. *By Lauenen and the Chrinnen Pass.* 6¼ hrs.

By a détour of only 1 hr., the traveller going to the Val des Ormonds may see something of the fine scenery of the valley of Lauenen as

well as that of Gsteig. Taking a char, if so inclined, over the 2 leagues that separate Saanen from Lauenen (see Gelten Pass, last Rte.), he first crosses the low Chrinnen Pass (5,430′), lying between two mountains, both called *Windspillen*. The higher of the two on the S. side of the pass, and called, for distinction, Wallis-Windspillen (6,522′), is a projecting buttress of the Arbelhorn. 2 hrs. suffice to reach Gsteig from Lauenen, and $2\frac{1}{4}$ hrs. more lead the traveller to the Hôtel des Diablerets.

Route G.

VEVEY TO THUN, BY BULLE AND THE SIMMENTHAL.

	Post leagues	English miles
Châtel St. Denis	$2\frac{5}{8}$	8
Bulle	$4\frac{1}{8}$	$12\frac{1}{4}$
Château d'Oex	6	18
Saanen	$2\frac{3}{8}$	7
Zweisimmen	$2\frac{7}{8}$	$8\frac{1}{8}$
Weissenburg	$3\frac{6}{8}$	$11\frac{1}{4}$
Thun	$4\frac{6}{8}$	$14\frac{1}{4}$
	$26\frac{1}{2}$	$79\frac{1}{4}$

A high-road traversed by diligences; but it is necessary to change carriages twice, if not oftener, and places cannot be secured at starting for the entire way from Vevey to Thun, or *vice versâ*. Persons who can walk or ride will usually prefer some one of the passes mentioned in the next route to the circuitous course followed by the post-road between Vevey and Montbovon or Château d'Oex.

The scenery of the Simmenthal and the valley of the Sarine have scarcely been sufficiently appreciated by tourists These valleys do not, of course, rival in wildness and sublimity the more famous sites that lie at the base of the giants of the Alpine chain, but they abound in beauties of no mean order, and a few days may be very well devoted to this route. The mountaineer will not want opportunities for gratifying his climbing propensities, since the panoramas from the Moléson, the Dent de Jaman (both noticed in next Rte.), the Stockhorn, and the Niesen (§ 23, Rte. A), must be reckoned amongst the most interesting that are attainable from the secondary peaks of the Alps.

A fine modern road, very well engineered, mounts from Vevey through an opening in the hills watered by the stream of the Veveyse, commanding noble views over the Lake of Geneva. At one of the finest points, about 2 m. from the town, is the Hôtel Bellevue. Five miles farther the road enters the Canton Fribourg, and soon after reaches

Châtel St. Denis (Inns: Maison-de-Ville; H. des Treize Cantons). The church and castle, in great part modernised, are said to be of high antiquity. From hence to Montbovon the post-road makes a great détour, more than doubling the direct distance between those places, passing round the base of the Moléson (see next Rte.), which is accessible from almost any part of the circuit. The road is hilly and not very interesting as far as

Bulle (Inns: Cheval Blanc, 'dear' [J.]; Maison de Ville), a thriving town, the chief depôt of the Gruyères cheese, 2,523 ft. above the sea. Having been burnt to the ground in 1805, it is almost altogether new. Trains on the branch railway to Romond (Rte. K) on the line between Lausanne and Fribourg run in $\frac{3}{4}$ hr. Here the road, which had followed a NE. direction from Vevey, turns abruptly to S. and passes along the E. base of the Moléson, ascending the valley of the Sarine. Half a mile from Bulle is La Tour de Trême, a large village, and about 2 m. farther the road passes at the foot of the hill whereon stands the little half-fossil town of *Gruyères* (Germ. *Greyerz*), with no decent inn. It deserves a visit for the sake of its church, partly destroyed by fire in 1856, containing a curious monument of one of its former lords, but especially for its very picturesque castle, once the seat of the Counts of Gruyères, sovereigns of the surrounding district. The building is

tolerably well preserved, and contains the torture-chamber, and other relics of an age to which some persons look back with regret.

The scenery is very pleasing throughout the 10 m. of road from Bulle to *Montbovon* (Inns: H. de Jaman, very fair and reasonable; Croix Blanche), 2,608 ft. above the sea. Horses for the pass of the Col de Jaman 10 fr. each. (See next Rte.) The road now enters a wild and picturesque defile, called *La Tine*, from a hamlet with a homely inn (L'Ours), which lies amid masses of rock and the shade of forest trees. A little farther on is a bridge over the Sarine, passed on the l. hand, which leads to *Rossinières*, a village on the rt. bank, where an unusually large wooden house offers good accommodation at a very cheap rate—charge 4½ fr. a day. [Immediately behind Rossinières is a mountain called *Le Cray* (6,795′), the summit of which, reached in 1¾ hr. by a path through fields, then up steep wooded slopes, finally along the ridge, commands a fine panoramic view. Still more remarkable is, however, the panorama gained from *Le Praz*, a point about 1 hr. more distant, and 600 ft. higher. This includes the chief summits of the Pennine Alps, a large portion of the Bernese Oberland, and most of Fribourg and the neighbouring parts of Canton Berne.] A mile beyond Rossinières the road reaches Moulins, where the path to Etivaz and Comballaz (Rte. B) turns off to the rt., and rather more than another mile of road leads to

Château d'Oex (Inns: H. Berthod, well situated; Ours; Maison de Ville), noticed in Rte. B. Farther on, the Sarine has worked for itself a deep bed in the limestone strata, and the road, henceforward carried along the rt. bank, alternately mounts and descends as it skirts the base of the mountains. Passing Flendru, where the path on the l. leads to Charmey (Rte. B), the next village is *Rougemont* (Germ. *Rothberg*), with an inn (Kreuz). In the castle, which was at the time a Cistercian convent, a printing press was established so early as 1481. Some specimens of its productions are still extant. About half-way on the road to Saanen is the boundary of the Canton Fribourg. On entering that of Berne, the language of the population is changed to German. The valley of the Sarine is remarkable for the neatness and rustic elegance of the wooden houses, all pretty much of the same size and pattern, and ornamented with inscriptions, which usually record the names of the owner and his wife, with some appropriate Scripture text or rhyming motto

Saanen (Inns: Grosslandhaus, clean and reasonable; Ours, not recommended), a country town with considerable trade in cattle. The French name is *Gessenay*. Here the valley of the Sarine turns due S., mounting to Gsteig and the pass of the Sanetsch (Rte. E). The road to Thun crosses an open plateau of marshy land, called Saanenmooser, which forms the watershed between the Sarine and the Simmen. Bold and fantastic peaks, clothed in their middle zone with pine forest, and above rising in precipices of bare limestone, add interest to the scenery. The most conspicuous from Saanen is the *Rüblihorn* (7,569′), behind which is the *Gummfluh* (8,068′), the highest summit of the range W. of the Gsteig Thal. Nearer at hand, on the rt. hand ascending to the Saanenmööser, is the *Hornfluh* (6,408′). There is a tolerable inn near the summit of the pass, which is 4,226 ft. in height. A rather rapid descent leads to

Zweisimmen (Inns: Couronne, new and good; Bär, not good), at the junction of the main stream of the Simmen, descending from the glaciers of the Wildstrubel (§ 23, Rte. E), with the lesser branch flowing from the base of the Hornfluh. The road to Thun follows the l. bank for about 2 m., then crosses the stream, and enters the fine gorge of *Laubeck*, overlooked by a castle of the same name. An inscription records the opening of the present road through the defile, once notorious

for the accidents that occurred to travellers by the old and dangerous road. The traveller soon returns to the l. bank, and 5 m. from Zweisimmen reaches *Reidenbach*, whence turns off to the W. a path to Bulle by the Klus and Val de Bellegarde (Rte. B), and another path leading in 4 hrs. to the baths of Domène (Rte. L) The valley of the Simmen continues to be a mere defile shut in between steep rocks. A mile farther on is

Boltingen (Inn: Bär, improved), a pretty village with characteristic large wooden houses, 2,726 ft. above the sea, at the base of the Mittagfluh, the summit of which may be reached in 3½ hrs. A huge block of limestone fell from the mountain a few years ago at no great distance from the village. The next place is Oberwyl, more than 2 m. lower down in the valley, and nearly 3 m. farther on is the post station of

Weissenburg (Inn: Poste), with the ruins of two castles. Horses and *chaises-à-porteur* may be engaged here for the ascent to the *Baths of Weissenburg*, about 2 m. distant. The path mounts steeply in zigzags, and then enters a gorge that gradually narrows till it becomes a mere cleft traversed by the *Buntschi* torrent. Here, in a site somewhat resembling that of the famous Baths of Pfäfers, is a large new establishment, said to be well kept and reasonable, which, along with the older and inferior building, can accommodate 300 guests. The waters resemble those of Leuk (§ 23). Being 2,930 ft. above the sea, the situation is cool, though the sun is very powerful during the two or three hrs. in which it daily reaches the baths. Pedestrians may reach from hence the summit of the Stockhorn, and descend to Thun, or to the Baths of Blumenstein. The way lies by Morgeten to the hamlet of Buntschi, and thence by the Wahlalp to the summit. Nearly 4 hrs. are required for the ascent, but ½ hr. may be saved by a short cut up the face of a limestone rock about 300 ft. in height. The ascent is made by rather rickety ladders fixed against the rock, and in part by steps and notches cut into the stone. It should, of course, be attempted only by very steady climbers. Paths lead from the Baths to Blumenstein, and to Gurnigel (Rte. L). A guide should be taken in this district, as the mountains abound in abrupt faces of rock and deep clefts, which may cause long delays to a stranger attempting to find his way alone. Persons going to, or coming from, Boltingen on foot need not pass by the village of Weissenburg, there being a path from the Baths to Oberwyl.

About 4 m. beyond Weissenburg is *Erlenbach* (Inn: Krone), at the S. base of the *Stockhorn* (7,195′), a conspicuous peaked summit in that outer range of the Alps that lies between the Simmenthal and the basin of Central Switzerland. A little lower than its rival, the Niesen, it is not quite so well placed for a view of the Oberland Alps, but the view of the Lake of Thun is even finer, and in the opposite direction it overlooks a large portion of the Cantons of Berne and Fribourg. A mountaineer will be glad to take the summit on his way to Thun. The direct track from Erlenbach by the Klusi Alp and the Klusen See is throughout very steep, and requires the assistance of a local guide to point out the way. 3½ hrs. suffice for an active climber to reach the summit. The botanist may find several rare plants. The descent to Thun lies along the ridge NW. of the summit, and gradually bears to the rt. by steep but not difficult slopes till the châlets of Aelpithal are reached. Thenceforward a path leads down through pine forest and over Alpine pastures to the hamlet of Oberstoeken, and then to *Amsoldingen*, about 3½ m. from Thun. The descent may be made in 4½ hrs., but 6 hrs. should be allowed from Thun to the summit.

After passing Erlenbach a slight ascent enables the road to command a view of the opening of the Simmen-

thal between the twin peaks of the Stockhorn and the Niesen, whose pyramidal summits, rising on either side 6,000 ft. above the valley, form a portal that has not many rivals in the Alps. Beyond *Latterbach* the road passes opposite the castle of Wimmis, whence the ascent of the Niesen (§ 23, Rte. A) is commonly made, and then descends towards the shore of the Lake of Thun, where it joins the Interlaken road, and 3 or 4 m. farther reaches *Thun*. (See § 23, Rte. A.)

Route H.

CHÂTEAU D'OEX TO VEVEY, ON FOOT OR HORSEBACK.

Those who would avoid the long and rather uninteresting détour by the road between Vevey and *Château d'Oex*, have a choice of several paths, all of them very attractive, especially to those who are approaching the Lake of Geneva from the N. All these paths traverse the ramification of the Alpine chain that extends from the Val des Ormonds to the Moléson S. of Bulle. The chief summits are the *Tour d'Ay* (7,818′), *Tour de Mayen* (7,622′), *Dent de Naye* (6,693′), *Dent de Merdasson* (6,132′), and the *Dent de Jaman* (6,165′).

1. *By the Moléson.* From 12 to 13 hrs.

This route is rather too long to be conveniently made on foot in one day from Château d'Oex, or even from Montbovon (see last Rte.). The best plan is to sleep at the village of *Albeuve*, rather more than 1 hr. beyond Montbovon, on the road to Bulle, where there is said to be a tolerable country inn. The *Moléson*, which is the object of this expedition, is not a single well-defined peak, but rather a highland district, affording pasturage to vast herds of dairy cattle, and culminating in a ridge 6,578′ in height. The summit is easily reached from many points on the road between Montbovon and Châtel St. Denis (see last Rte.); but as the highest point is seldom in view, a guide is more requisite than in the ascent of many less accessible mountains. Irrespective of the wide panoramic view of the Alps, it commands an unusually extensive view over the low country of Switzerland, and there is perhaps no other summit whence so large a number of towns and villages can be distinctly seen in favourable weather. There is no place of entertainment on the mountain, but dry hay may be found at some of the numerous châlets by those who would pass the night in order to enjoy the early morning view. The ascent from Albeuve requires about 3½ hrs., and 3 hrs. suffice for the descent to Châtel St. Denis, passing by the châlets of Trémettaz. The path from Bulle is perhaps the most frequented. At 2 m. from that town it passes by the suppressed monastery of Part-Dieu, and after an ascent of 2 hrs. more reaches the châlet of Plané, where strangers often pass the night. Thence to the summit is a walk of 1 hr.

2. *By the Col de Jaman.* 8 hrs., or 6 hrs. from Montbovon.

This is deservedly the most frequented way from the valley of the Sarine to Vevey. The pass is commonly taken from Montbovon, but in approaching it from Château d'Oex the traveller may save ½ hr. by taking a path to the l. soon after passing La Tine, and fully a mile before reaching Montbovon. After crossing the stream of the Hongrin the bridle-path ascends to En Allière, a hamlet with a rough but clean inn, where wine, bread and eggs, supply luncheon. Following the track up hill towards SW., the traveller in 1½ hr. more reaches the *Col de Jaman* (4,872′). There are many more extensive views from Alpine passes than that which is here suddenly opened before him, but it would be hard to name another more perfectly beautiful. The grand ranges of the Savoy Alps, seen across the blue Lake of Geneva, are framed in an exquisite

setting of nearer scenery, wherein bright green pastures and sombre pines are contrasted with the bold forms of the surrounding limestone peaks. It is not surprising that Byron, in a well known passage, should have declared this route to be 'beautiful as a dream,' for even the least impressionable passenger cannot escape its fascination. The mountaineer will be tempted to ascend the adjoining peak of the *Dent de Jaman* (6,165′). The precipitous faces of rock that it shows towards the S. and W. are completely inaccessible, but by its steep N. slope the summit may be reached in 1 hr. from the Col; not, however, without a stiff climb. The summit, which overlooks a picturesque mountain tarn—the Lac de Jaman—commands a view of the Bernese Alps, the entire Lake of Geneva, a wide tract of the Pays de Vaud and the rich country at the foot of the Jura, including the lakes of Neuchâtel and Morat.

About ½ hr. below the Col de Jaman the path divides. That to the left descends directly to Montreux by the l. side of the stream that flows from the Col. To the rt. is a paved path, leading by a shorter way to Vevey, which may be reached in 3 hrs. from the summit. The path is so well marked that a guide is not needed; but there is a more shady and agreeable path than the hot and rough paved track.

[In going from Ormond Dessus or Sepey to Vevey, the traveller may follow a mule-track that passes a large rock or boulder called Pierre Mouillée, traverses Alpine pastures, and then descends along the Hongrin, till, on approaching En Ailière, he bears to the rt., and reaches the Col de Jaman in 5 hrs. from Sepey, or if bound for Villeneuve, he may join the track of the Col de Chaude at Les Crêtes.]

3. *By the Col de Chaude.* 7½ hrs. The most direct way from Château d'Oex to the Lake of Geneva is by the Col de Chaude, leading to Villeneuve, and from the summit of the pass the traveller may ascend several adjoining summits. The range connecting the Tour d'Ay with the Dent de Jaman abounds in caverns, deep clefts, and circular shafts, often of great depth, and the naturalist who would devote some time to the exploration of this range could scarcely fail to find many objects of interest. As mentioned in Rte. B., the Col de Chaude may be reached from Lécherette on the way between Comballaz and Château d'Oex, but a more direct way from the latter place is by *Ratevel*, Les Crosets, and Lavanchy. A short distance below the Col are some châlets, whence the traveller may ascend the *Dent de Naye* (6,693′). The view is much the same as that from the Dent de Jaman, save that, as this is 528 ft. higher, it commands a larger portion of the mountains on either side of the valley of the Rhone. A steep descent leads from the Col along the Tinières torrent to Plancudray, and thence to Villeneuve, which is reached in little more than 5 hrs. from Château d'Oex. Thence to Vevey s 7 m. by road or rly.

Route I.

VEVEY TO FRIBOURG AND BERNE.

	Post leagues	English miles
Bulle	6¾	20¼
Fribourg . . .	5¾	17¼
Berne . . .	6¼	18¾
	18¾	56¼

Travellers pressed for time will avail themselves of the railway from Lausanne to Berne, taking the train at the Chexbres station. (See next Rte.)

The road from Vevey to Bulle is described in Rte. G. Although there are no objects of especial interest on the road from Bulle to Fribourg, the country is so picturesque, so rich with thriving villages, scattered houses, orchards, and clumps of timber, with occasional villas, and the remains of many buildings of the feudal period, that in any other country than Switzer-

land it would be sure to excite unusual admiration. One of the most pleasing views on the way is from the hamlet of Bry, about half-way between the two towns. Before entering Fribourg there is a stone cross, near the spot where the road crosses the rly. from Lausanne, whence Mont Blanc is visible in clear weather.

Fribourg (Zähringer Hof, close to the bridge, excellent in all respects and, considering the accommodation, very reasonable; Grand Hôtel de Fribourg; Hôtel des Merciers; well spoken of) is a town of over 10,000 inhabitants, called in German *Freiburg*, famed for the beauty of its site on the summit of a promontory of almost vertical rocks, whose base is washed by the stream of the Sarine. It is often compared to Berne, but if when seen from without its position is even more picturesque, the interior cannot bear comparison with that of the capital of Switzerland. The chief object of interest here is the famous suspension bridge, in many respects the most remarkable, as it was one of the earliest constructed in Europe.

The length between the great gateways at either end is 941 ft., and the height above the Sarine 181 ft. The bridge is supported by four wire cables, each containing 1,056 strands of wire, but so slight in appearance that from a distance the entire structure appears a mere cobweb when compared to the massive chains to which we are accustomed in England. The severest tests have been applied without injury, and there is no reason to doubt that the fabric, due to the skill of M. Chaley, of Lyons, which has now been in use for 30 years, will be as durable as other more cumbrous and expensive works.

A second bridge, not much inferior in dimensions to the first, was completed in 1840. It is thrown over the gorge of the Gotteron on the side of the Sarine opposite the town. It is 689 ft. in length, and 318 ft. above the bottom of the gorge. The wire cables on which it hangs are attached immediately to the rocks on each side, and as they are fixed at points of unequal height the effect is very singular.

The chief object of interest in the town is the Church of St. Nicholas, one of the best specimens of ecclesiastical architecture in Switzerland, well restored in 1856. There is a very curious bas-relief over the portal under the tower. In the church is the famous organ built by Aloys Moser, once considered the finest in the world, and still possessing but few rivals. Until lately there was a daily performance with admission by ticket, but for the last two or three years it has been necessary for strangers to make a special arrangement with the organist.

Most travellers go from Fribourg to Berne by railway (see next Rte.), but the country is so rich and pleasing that those who prefer to travel by the road do not repent of their choice. The most frequented route is by *Neueneck*, but some will prefer to pass by *Laupen*, which has given its name to one of the battles in which the Swiss laid the foundations of their independence. The distance by either road is about 20 m.

Berne is described in § 23, Rte. A.

Route K.

LAUSANNE TO BERNE.

There are several roads from Lausanne to Berne, all of them passing through fine country, and leaving a pleasing impression of the comfort and prosperity prevailing throughout most parts of the Swiss Confederation, and which seem to be altogether independent of differences of race or religion, whatever may be said or fancied to the contrary. Most persons, however, prefer the railway, which abridges the journey, and carries travellers at once to their intended headquarters.

1. *By railway.* 95 kilomètres = 59 Eng. miles.

After quitting Lausanne the rly. to

Fribourg leaves the line to Vevey and St. Maurice, and gradually ascends to a considerable height on the slope above the lake, parallel to which it is carried for a considerable distance. It crosses a small torrent called Paudèze by a fine viaduct of 9 arches, which is followed by two other considerable works of the same kind before entering the tunnel that leads to the *Grandvaux* station. Between this and the following station some glimpses are obtained of the Savoy Alps and the lake. At the

Chexbres station passengers to and from Vevey join the line. Omnibuses take more than an hour to ascend to the station—fare 1 fr. The rly. now turns to the N., and after passing several minor stations, reaches

Romond (Inns: Cerf; Couronne), an old fortified town (2,326′), with a ruined castle, said to have been built by one of the Burgundian kings. Views of the Mont Blanc range are obtained in fine weather. The rly. traverses an undulating country, and follows a NE. direction for 16 m. farther to

Fribourg—described in last Rte. Little is seen from the rly., which passes through a tunnel to the station on the W. side of the town. Travellers who halt for the interval between one train and another are advised to walk from the station to the suspension bridge, cross this, and follow the road leading to the bridge over the Gotteron. After crossing it they should descend into the valley, and re-enter the town near the Arsenal.

After leaving Fribourg the rly. is carried over the Sarine by a massive lattice bridge, and traverses another considerable bridge before reaching the station of *Guin* (Germ. *Düdingen*). Several tunnels are passed, but in the intervals are very interesting peeps at the fine country through which the line is carried. At Flamatt the rly. enters the Canton Berne by a bridge over the *Singine* (Germ. *Sense*), which separates it from Fribourg. The grand outline of the Oberland Alps comes into view before reaching

Berne (§ 23, Rte. A).

2. *By Payerne and Morat.* 19 post leagues = 57 Eng. miles.

Diligences still travel by this road, employing 10 hrs., but most strangers who prefer the road to the railway will also prefer a carriage to the diligence.

From Lausanne the road begins at once to ascend the W. slopes of Mont Jorat, commanding views of the lake, but Mont Blanc is concealed by the intervening mountains of Chablais. The highest point (2,878′) is reached about 6 m. from the town. After traversing a bare tract the road descends into a rich valley, and 15 m. from Lausanne reaches

Moudon (Inns: Cerf; Victoria, not good; Maison-de-Ville), one of the most ancient towns in Switzerland. An antiquary might find much occupation in examining the many ancient buildings, some of which are partly of Roman construction. M. Tissot, a notary, has a collection of coins and medals chiefly found on the spot. It is a pleasant drive of 13½ m. hence to

Payerne (Inns: Stadthaus, or Maison-de-Ville; Bär; both good), a walled town, called in German *Peterlingen*, containing the tomb and other memorials of Queen Bertha. The church, founded by her in the tenth century, converted at the Reformation into a corn market, is very curious in its architectural details. Diligences run daily from hence by *Estavayer* to Yverdun, 18½ m., and to Fribourg, 12¼ m.

The road to Morat, distant 12 m., runs parallel to the E. shore of the Lake of Neuchâtel, but the country being flat, this is not seen from the road. 7 m. from Payerne the traveller reaches *Avenches* (Inn: Couronne), a little insignificant town on a hill, occupying a small portion of the site of the Roman Aventicum. Swiss historians carry the foundation of this city of the Helvetians to the sixth century, B.C. It was undoubtedly the capital of the Roman Helvetia, and, to judge from the extent of the remains, it must have been a city of first-rate importance.

For centuries the ruins served as a quarry, whence columns, marble pavements, and cut stone were drawn to serve as materials for churches and other buildings. Minor objects were sold to strangers or destroyed by the ignorant peasants, and it is only within a few years that the collection which now exists in a building near at hand has been formed under the management of a local antiquary. Among the objects preserved are a mosaic, several fragments of statuary, &c.

Nearly 4 m. beyond Avenches is a quadrangular stone column marking the site of the battle of Morat, wherein the Swiss confirmed by a still more bloody victory the ascendency they had acquired by the battle of Grandson, dealing to the same enemy a still more crushing blow. The bones of the dead, said to have reached 15,000 in number, were thrown together by the victors into a mound which formed the most significant record of the event. At the time of the battle the lake reached the walls of Morat, having in the Roman period extended to those of Aventicum, and many of the Burgundians were drowned in attempting to escape by the shallow shore. In 1798, at the time of the French invasion, a Burgundian regiment blew up the mound, and flung the contents into the lake. Human bones are often thrown up on the shore, and are sold for knife-handles.

The *Lake of Morat* (Germ. *Murten See*) is a shallow basin, about 6 m. long by 2 m. in width, 1,427 ft. above the sea-level, with low shores, and communicating with the Lake of Neuchâtel by a shallow channel. In spring the surface is often covered with a pink scum formed by myriads of a species of Infusoria—*Oscillatoria rubens*. The small town of *Morat* (Inns: Couronne; Aigle; Lion) preserves but slight traces of its former importance. The castle dates from the thirteenth century. Neuchâtel may be reached by steamer in 1½ hr., or by road, a distance of 16½ m. To Fribourg (omnibus 3 times a day, in 2 hrs.), by *Courgevaux* is 10½ m. On a low hill near the latter village is a lime-tree, said to be 36 ft. in circumference, and believed to have existed at the time of the battle of Morat, in 1476. The road to Berne—a distance of 17 miles—passes through pleasing scenery, especially in approaching the city, when the outline of the Oberland Alps comes into view towards the SW

Route L.

BULLE TO THUN.

The mountain country between Bulle and Thun includes much beautiful scenery, scarcely ever visited by strangers, but resorted to by Swiss visitors for the sake of mineral waters, of which several are noticed below. The shortest way to Thun is by the Val de Bellegarde (Rte. B), leading by the Klus to Boltingen in 8½ hrs., and thence to Thun in 6½ hrs.

Another route, at least equally interesting, passes by Val Sainte and the Baths of Domène, about 16 hrs.' walk.

A char-road leads from Tour de Trême to Broc, where it crosses the Sarine near its junction with the Jogne, and ascends to *Crésuz* about 1¾ hr. from Bulle. Here the Val de Bellegarde is left on the rt., and the road ascends partly through forest, amid very picturesque scenery, to *Val Sainte* (3,360′), originally a Carthusian monastery, now private property, at the foot of a conical summit called *La Berra*. This mountain is an annual rendezvous of the country people for games and festivity on the third Sunday in July. The top may be reached in 5 hrs. from Fribourg.

The char-road ceases at Valsainte; a mule-path mounts thence in 1½ hr. by the S. side of the Berra to the *Chessalle-Eck*—a low pass (4.659′) commanding pleasing views in both directions—and descends in 1 hr. to the Baths of

Domène. A large house, capable of receiving 100 visitors, stands close to a small dark lake (3,464′), picturesquely placed in the midst of mountains that rise from 2,000 to 3,000 ft. above its shores. The *Kaisereqq*, lying to the SE., is visited especially by botanists. The summit (7,188′) is reached in 3 hrs. from the Baths. A guide is almost necessary, as the way is steep, and not very easy to find.

From the Baths a char-road descends in 1½ hr. to the junction of the two branches of the *Singine* (Germ. *Sense*), one of which flows from the Lac Domène, the other from the *Ganterisch Pass.* To reach the pass is a walk of 4 hrs. from the junction of the two streams, and 2½ hrs. of rather rapid descent lead thence to

Blumenstein, a very beautiful spot, 2,205 ft. above the sea, frequented for the sake of its mineral waters, containing iron, combined with salts of magnesia. The establishment is plainly fitted up, but clean and not uncomfortable. There are in the neighbourhood an old castle, a cascade of the Fallbach, and several points commanding beautiful views of the Lake of Thun and the Oberland Alps. A more considerable excursion is the ascent of the Stockhorn (Rte. G), which may be accomplished in 4 hrs.

There is a good road from Blumenstein to Thun by Thierackern; the distance about 6 m. Charge for a char 6 fr., and 1 fr. to the driver.

Thun is described in § 23, Rte. A.

[From the Ganterisch Pass the traveller may turn aside from the path to Blumenstein, and with the help of a guide find his way to the Baths of *Gurnigel*, 3,783 ft. above the sea. The establishment can accommodate more than 200 visitors. There are two sources, both sulphureous, among the most frequented in this part of Switzerland, and considered efficacious in the cure of some internal diseases. The summit of the *Hoch Gurnigel* (5,066′), easily reached in only 1¼ hr. from the Baths, commands an extensive view. A longer excursion, requiring at least 3 hrs., is that to the much higher summit of the *Ganterisch* (7,143′). The descent may be made to Blumenstein, or to the Baths of Weissenburg (Rte. G.)]

SECTION 23.

GEMMI DISTRICT.

The middle portion of the range of the Bernese Alps is best known to tourists by the remarkable pass of the Gemmi,* leading from the Lake of Thun to the Baths of Leuk in the Valais, and that name is therefore selected to designate the district described in this section. It includes the part of the main chain lying between that pass and the Sanetsch, described in the last section, with the short glens which descend towards the Rhone on its S. side, and the more considerable tract belonging to the Canton Berne, lying between the head waters of the Sarine and the Kanderthal.

If it were not for the near neighbourhood of the higher group, called *par excellence* the Bernese Oberland, this district would probably have attracted a still larger share of attention than it has received from travellers. It contains much grand and beautiful scenery, and there are not many spots where a mountaineer can find more enjoyable head-quarters than at An der Lenk, Kandersteg, or the Baths of Leuk. The characteristic advantage of the Alps over all other European mountain chains is here especially manifest. Elsewhere, as, for instance, in the Pyrenees, the higher mountains form a single range, so that, on gaining one

* Sometimes written Ghemmi, but incorrectly, since the letter *g* in German is always pronounced as in the English words *get*, *give*, &c.

of the conspicuous peaks the eye ranges over a wide horizon, but does not encounter on either side objects of equal grandeur upon which it can rest. In this, and most other parts of the Alps, the mountaineer who has attained some lofty point is confronted by opposing ranges of equal or greater height, and is more or less completely encircled by snowy peaks that, in ceaseless variety of form, exhibit in a single view every conceivable combination of the elements of the sublime and beautiful in nature. In this district calcareous rocks prevail almost exclusively, and the near scenery, marked by the characteristic beauties that appertain to that material, contrasts in a striking manner with the great range of the Pennine Alps, rising on the opposite side of the Rhone valley, where crystalline rocks impress their peculiar mark upon the aspect of the mountains.

The highest summits of the range lying between the Gemmi and Sanctsch passes are the Wildhorn (10,722′) and the Wildstrubel (10,715′), but it will be convenient to include in this section some notice of the higher peaks, outliers from the Oberland group, that rise in the immediate neighbourhood of Kandersteg.

Route A.

PARIS TO THE BATHS OF LEUK, BY BASLE AND THUN.—ASCENT OF THE DOLDENHORN AND ALTELS.

	Kilomètres	Eng. miles.
Mulhouse (by railway)	491	305
Basle	30	18¾
Olten	38	23½
Berne	67	41½
Thun	26½	16½
	652½	405¼

	Post leagues	Eng. miles
Frutigen (by road)	4¾	14¼
Kandersteg	2½	7½
Schwarenbach (by mule-path)	3⅓	9
Baths of Leuk	3	8
	13¾	38¾

The arrangements on the French railways are ill adapted to the convenience of travellers going to Switzerland. Until the Neuchâtel line shall have been made more available for the general convenience of tourists, those bound from Paris to Berne, who dislike night travelling, should go by the trains of the Chemin de Fer de l'Est, from Paris to Mulhouse by Troyes and Belfort. From Mulhouse the traveller proceeds to Basle by the Strasbourg and Basle line, belonging to the same company. There are but two direct trains daily from Paris to Basle. The morning train, carrying first and second-class passengers, reaches Basle in 14 hrs., while the so-called express night-train, with first-class passengers only, takes 13 hrs. From Basle to Paris there is but one direct train, at 4 p m. daily, which consumes 13½ hrs. on the way. The *buffet* here is ill-managed and dear; it is better to get refreshment at the Schweizerhof.

Basle (Germ. *Basel*) (Inns: Trois Rois, first-class; Schweizerhof, H. Euler, both good and close to French railway station; Sauvage; Couronne; Cicogne; Faucon; these four are second class, but fairly good) is a wealthy old city, the most interesting in Switzerland to lovers of art and remains of antiquity. The Münster — formerly the cathedral—is a curious building of red sandstone, exhibiting a singular mixture of the Romanesque and pointed styles of architecture. It contains many objects worthy of notice. The Council of Basle met in this church in 1431. The small hall, originally a chapter-house and now called Concilium-Saal, was used only by committees of the council. This has been made available for a collection of curiosities, including some relics of Erasmus, and 6 fragments of the original Dance of Death, falsely attributed to Holbein, since it existed here at the period of the Council.

The New Museum contains an important collection of pictures and drawings by early German masters, in-

cluding 36 works of the younger Holbein. The Passion and the Dead Christ are counted among his masterpieces. There are besides a few Flemish and Italian pictures of no importance, and some specimens of the modern Swiss school. In the same building is the library, containing several unique and very valuable MSS., a collection of antiquities and coins, and another of objects of natural history. The University boasts the names of many famous men among its professors. Paracelsus, Erasmus, Œcolampadius, Bauhin, Euler, the Bernouillis, and many others, may be enumerated in the list.

Not far from the Spahlenthor, a curious ancient gateway, is a fountain, called Holbein's Brunnen, the decorations of which were executed after drawings by that master. A stroll through the town will reward the lover of mediæval architecture, as many curious fragments have survived the changes of fortune and fashion since Basle passed from the condition of an imperial city to that of a free member of the Swiss Confederation.

The bridge across the Rhine leads to Klein Basel, on the rt. or German bank of the stream, where stands the terminus of the Baden railway. See § 26, Rte. A.

Seven miles from Basle, on the road to Rheinfelden, is *Augst*, standing on the site of the Roman *Augusta Rauracorum*, once a place of great importance, destroyed by the Huns in 450. The foundations of an amphitheatre, and other buildings, may be traced, and some columns and inscriptions are preserved here, but most of the portable objects have been removed to the museum at Basle.

[Those who prefer to travel at leisure through a fine country to the rapid but unsatisfactory process of railway transport, may reach Berne from Basle by the Val Moutiers, or Münster Thal, and Bienne. Three or four days may be agreeably employed in this way. The distance from Basle to Bienne is 57 m.—Thence to Berne 48 m. by rly.; 20 m. by road. At St. Jacob, close to Basle, a Gothic cross commemorates the never to be forgotten battle, fought in 1444, by 1,500 Swiss against 30,000 French troops. At the close of the day 1,458 Swiss lay dead or mortally wounded on the field, having slain three times their own number—some accounts say 8,000—of the enemy. A few miles farther another battle-field, near the village of Dornach, recalls a victory of the Swiss over the Austrians. The road enters the valley of the *Birs*, otherwise called *Val Moutiers* (Germ. *Münsterthal*). Before reaching *Lauffen* (Inn: Sonne, not good), 16 m. from Basle, the valley is contracted to a very picturesque defile. Beyond this, the French tongue replaces German. At the mineral baths of *Bellerive* is a good and reasonable hotel. Three m. farther the valley opens out, and the road to Bienne, bearing to l., passes close to the large village of *Delémont* (Inn: Ours). A defile, on a grander scale than that already passed, leads to *Moutiers Grandval* (Inns: Couronne, good; Cerf), 17½ m. from Lauffen, so called from a famous monastery founded by St. Germain in the 7th century. A light carriage with 2 horses, costing 20 fr., may be engaged here to reach the summit of the Weissenstein over Soleure. The valley, which had widened out at Moutiers, is once again narrowed to a mere cleft, traversed by a new road which replaces the very ancient passage, ill fitted for modern vehicles. This defile, the finest of those on the way to Bienne, extends to *Court* (Inn: Ours), about 4 m. from Moutiers. 'Here the pedestrian may shorten the distance to Bienne, avoiding Malleray, Tavannes, and Sonceboz, by crossing the ridge of Montoz due S. of Court, and rejoining the road 5 m. from Bienne by descending through the Combe de Pery.'—[W. M.] The Hasenmatt (see below) may be reached on foot in about 5 hrs. The main road is now carried through green

meadows to *Malleray* (Inn: Lion d'Or, good, but not cheap), and thence to *Tavannes* (Inn: Couronne), 4 m. from Malleray, and 11 m. from Moutiers, a pretty village (2,523′), near the head of the valley of the Birs. The road now mounts a steep ascent, and traverses a natural arch in the limestone rock, well known as the *Pierre Pertuis*. A partly effaced Roman inscription proves the antiquity of this passage. Having crossed the dividing ridge, the road descends to *Sonceboz* (Inn: Couronne, good), a small village in the valley of the Suze, whence a very picturesque way along that stream leads in 12½ m. from Tavannes to

Bienne (Inns: Couronne, is, or was, good and reasonable; H. du Jura, dear; Croix Blanche), lying at the opening of the valley of the Suze, about 1 m. from the lake of the same name. The German name is Biel, and that of the lake Bieler See. Neuchâtel (§ 22, Rte. A) may be reached by rly. in little more than 1 hr. At *Nidau* and other places on the Lake of Bienne, considerable remains of lacustrine dwellings have been found. The railway from Bienne to Berne makes a great détour, joining the direct line from Basle (described below) at Herzogenbuchsee, 23 m. from Bienne. The only place of interest passed on the way is

Solothurn (Inns: Krone, good and reasonable; Rother Thurm; Hirsch; Falke), the chief town of the canton bearing the same name. The French name is *Soleure*, but the German tongue here predominates. This claims the distinction of being, with the sole exception of Treves, the most ancient city in Europe N. of the Alps, but does not contain many important remains of its early period. The Cathedral, built in the last century, is not very interesting. The Clock Tower, in the market-place, is certainly very ancient, though probably not of Roman origin, as commonly asserted. The Arsenal contains a fine collection of ancient armour, and many standards taken by the Swiss in the battles by which they established their independence. The Museum is of interest to the geologist, on account of the fine collection of fossils from the Jura, chiefly formed by the naturalist Hugi.

The portion of the Jura range N. of Solothurn is called the *Weissenstein*. This ridge commands one of the most famous panoramic views of the Alps. The very fair inn at the top is frequented by visitors who go for the sake of the view, and by others who remain to enjoy the pure air and goat's milk or whey, often recommended to delicate persons. The charge *en pension* is from 4 fr. to 6 fr. a day. Three hrs. are required to reach the inn on the mountain from Solothurn. This is 4,209 ft. above the sea, and 2,812 ft. above the city. The view is more extensive from the Röthefluh (4,587′), 40 min. from the inn. The *Hasenmatt* (4,754′), which is the highest summit of the ridge, is 1½ hr distant, and the view not much superior to that from the Röthefluh. There is a road from Basle to Solothurn by the Hauenstein.]

The Swiss Central Railway has a trunk line from Basle to Olten, and three main branches leading thence to Berne, Lucerne, and Zurich, the three chief towns of the Confederation. The line to Olten starts from the station at Basle, which forms the terminus of the Alsace rly., and travellers pressed for time, who do not wish to enter the city, will find a pretty good restaurant at the station. They should bear in mind that Swiss rlys. are regulated by Berne time, 26 min. in advance of Paris time kept on the French lines.

On leaving Basle the rly. crosses the Birs, passing N. of the battle-field of St. Jacob, and is carried SE. through a fine country to *Liesthal* (Inns: Falke, Schlüssel; neither good), the chief place of the half-canton Basle Campagne, the single State having been divided into two, after a brief but bloody struggle, in 1832. There is a road hence to

Solothurn, 28½ m. distant, crossing the *Hauenstein*, a continuation of the ridge of the Jura. The rly., passing through a picturesque district by the *Sissach* station, traverses two or three short tunnels, and then enters the great tunnel, 1½ m. in length, by which it pierces the NE. extremity of the Jura range. The Hauenstein Tunnel was, in 1857, the scene of a frightful accident, arising from the falling in of a shaft, whereby 52 workmen, buried alive in the unfinished gallery, died of hunger or suffocation. Eleven other men lost their lives in the attempt to relieve their companions. On issuing from the tunnel the rly. commands a fine view over the valley of the Aar, and by a rapid curve, and a bridge over the river, reaches the *Olten* station, 23½ m. from Basle. Close at hand is the Hotel von Arx, good: and in the little town—supposed to be the Roman *Ultinum*—two inns: Thurm, pretty good; Halbmond. There is a good restaurant at the rly. station. Whatever be the traveller's destination, he must here change carriage. The lines to Berne and Lucerne keep together for a few minutes, till, after making a sweep round the little town of *Aarburg* (Inns: Krone; Bär), with a picturesque fortress on the hill above it, the latter line diverges to SE., while the way to Berne is carried SW., through an uninteresting country to *Herzogenbuchsee*, where the branch leading to Solothurn, Bienne, and Neuchâtel diverges to the rt. After passing two minor stations the country becomes more picturesque. *Burgdorf*, at the entrance of the Emmenthal, is a place of some local importance. The road to Interlaken or Lucerne, described in § 24, Rte. Q, here diverges to the l. At *Hindelbank*—14½ m. from Herzogenbuchsee—is the ancient castle of the Erlach family, still possessed by their descendants. Passing through fine parklike scenery, the rly. traverses the Aar by a fine lattice bridge, 154 ft. above the river, and reaches

BERNE (Inns: Bernerhof, large house, noble view, very good but dear; Hôtel de l'Europe, very good and reasonable, fine view; Schweizerhof, good and reasonable; Boulevard; H. de France; all these near the rly. station; Bellevue, near the mint, new and good; Falke (Faucon) in the Weibermarkt, well managed and reasonable. There are many good second-class inns, chiefly frequented by men of business; such are the Pfistern and Mohr, about the centre of the town; Distelzwang; Storch; Wilde Mann, near the rly. station; with others). There are several good cafés near the rly. station, but the most frequented in summer is the Pavillon, at the corner of the Minster Terrace. There are many *pensions*, of which that of Jaggi at La Villette has been well recommended.

This city, now the permanent seat of the Federal Government, is built on a sandstone promontory, 1,650 ft. above the sea, surrounded on three sides by the Aar. The tedious ascent and descent formerly required for crossing the river has been obviated by the opening of the Nydeckbrücke, a fine granite bridge, built of erratic blocks found on the Kirchet near Meyringen, standing at the E. end of the town, and giving access to the roads which diverge from the opposite bank of the Aar. The main line of street traversing the centre of the town, and passing under three antique towers, with footways on either side, carried under the first floors of the houses which rest on arcades, has a singular and picturesque effect. The Minster is a fine 15th century Gothic church, with many details that recall Strasbourg Cathedral. The organ an admired instrument, is played occasionally in the evening, entrance is charged, 1 fr. Opposite the W. entrance is the bronze statue of Rudolph v. Erlach, the hero of Laupen. The Minster Terrace is one of the most striking points of view in the city. At a height of 108 ft. above the Aar it commands a view of several of the highest peaks of the Oberland Alps. The new Roman Catholic church in

the Metzgergasse is a good specimen of modern Byzantine architecture.

The Natural History Museum is very interesting to naturalists, the zoological collection of Alpine mammalia, birds, &c., is extremely rich. The geological collections brought together by Prof. Bernard Studer are of great value and importance. In the same building is a collection of Swiss and other antiquities, and a so-called ethnographic collection, containing many objects brought from the South Sea Islands.

In the Bundes-Rathhaus, the place of meeting of the Federal Assembly, a stranger may be interested in hearing debates carried on alternately in four different dialects — French, Italian, German, and Swiss-German. The present Bear-pits, on the E. side of the Nydeckbrücke, replace the ancient cages in which from time immemorial these animals had been preserved in Berne, with a short interruption during the French invasion. The fancy which, at an early period, caused their adoption, as supporters of the city arms, has been maintained by tradition, until they have come to be regarded as guardians of the city.

To the lover of nature, there is nothing at Berne so attractive as the views of the Oberland Alps that are obtained from every commanding point in, and near to, the city. There is, indeed, no such panoramic view here as that which is gained from Turin and its neighbourhood, where more than half the horizon is girdled round by the peaks of the great chain; but the group of peaks seen from Berne is even more striking in form, and the effect of the contrast of the snowy range with the nearer scenery is more unexpected, and at least equally impressive. The view may be enjoyed from several points in the line of the ancient ramparts, now converted into public walks, but the most favourable position is perhaps that of the Engi Promenade, ½ m. N. of the rly. station. Another delightful walk is along the hill called Altenberg, opposite the town on the N. side of the Aar. It may be reached by a suspension bridge, or by the Nydeckbrücke. Another more elevated and more distant point of view is the summit of the *Gurten* (2,825′), about 4 m. from the town. Here, and at many other similar positions frequented by the citizens, a small inn or café supplies refreshments to visitors.

The distance from Berne to Thun by the rt. bank of the Aar, whether by road or rly., is about 16½ m. By the l. bank the road, which is on the whole more interesting, is about 2 m. longer. Most travellers go by railway, but those not pressed for time may with advantage travel in an open carriage, or one-horse char. There is no place of any special interest on the way, but the road presents scenes of continually increasing beauty, and the gradual though slow approach to the snowy Alps cannot fail to stimulate the curiosity of those who approach them for the first time.

Thun (Inns: H. Bellevue, first-class establishment in very beautiful grounds outside the town, with a chapel for English church service, prices rather high to passing travellers, families taken *en pension*; H. Baumgarten, chiefly frequented as a *pension*, in a pretty garden by the river, good, charges a little lower than at the Bellevue; Freienhof; Weisses Kreuz; Krone; Falke; all in the town) is perhaps the most beautifully situated town in Switzerland, standing nearly a mile below the point at which the Aar issues from the lake. The interior has an antique aspect, and offers a fine view from the church, but has no buildings of importance. The ancient castle, built in 1182, overlooks the town, and is a most picturesque object. From its towers, but equally well from many other points near the town, the traveller may enjoy a view of the lake and the Oberland Alps, which in its way can scarcely be surpassed. A sheet of beautifully blue water, 11 m. in length, is seen surrounded by forest-clad mountains, rising some 6,000 ft. above its

shores, and some of them, especially the Niesen, remarkable for the boldness of their forms. Behind these the marvellous peaks of the Jungfrau, Mönch, and Eiger, forming what was long deemed an insurmountable barrier of rock and ice, two miles in vertical height, close the view. Though Thun is too distant from the higher mountains to afford desirable head-quarters to the mountaineer, it is not surprising that less active persons, content to enjoy without much exertion perfectly beautiful aspects of nature, along with much comfort and even luxury, should select this as a halting-place during the fine season, which here extends from June to October. There are several pretty houses in the grounds of the Hôtel Bellevue, which are let to families boarding in the hotel, by the week or month; and many villas, beautifully situated near at hand, chiefly belonging to wealthy Bernese. Of the many attractive points of view near the town, the most frequented is the Pavillon St. Jacques, in the grounds of the H. Bellevue. The Blümlis Alp, Doldenhorn, and Gspaltenhorn are visible, in addition to the higher peaks already enumerated. The modern Gothic castle of Schadau, built by M. de Rougemont, stands in parklike grounds of extreme beauty. Permission to enter is usually given to strangers. The park belonging to another villa, called the Chartreuse, is still better worth a visit—the walk leading to a very pretty waterfall should not be omitted. Many places on or near the lake which form interesting excursions from Thun are mentioned in this and the following §. The Stockhorn, accessible in a rather long day's walk, and commanding a magnificent panorama, is described in § 22, Rte. G, and the baths of Blumenstein and Gurnigel, both deserving a visit from persons remaining at Thun, are noticed in § 22, Rte. L.

The *Lake of Thun* (Germ. *Thunersee*) is about 11 m. in length, by 2 m. in breadth. The surface is 1,837 ft. above the sea, and the greatest depth 768 ft. Besides the Aar, which drains the greater portion of the Oberland Alps, the lake receives the Kander, and several minor streams from the surrounding ranges. A steamer plies twice a day between Thun and Neuhaus, near Interlaken (see § 24), employing 1¼ hr.—fare 2 fr.

A post-carriage plies daily between Thun and Frutigen. A char from Thun to Kandersteg costs 17 fr., and from Frutigen to Kandersteg 7 fr.

On quitting the town the road to *Amsoldingen*, leading to the Stockhorn, is left on the rt. The main road crosses an alluvial flat, and nearly 3 m. from Thun approaches the lake near the Castle of Strättlingen, interesting from its association with the race which succeeded to the throne of Burgundy, and at a later date with the no less illustrious family of Erlach. The road to Saanen through the Simmenthal (§ 22, Rte. G) turns off to the rt., while that leading to Frutigen and Interlaken crosses the *Kander* by a long bridge. This stream, which rises in the glaciers near to the Gemmi, once flowed in a depression parallel to the lake, joining the Aar below Thun. The present course was cut in 1714, and the geologist will be interested in observing the considerable delta which it has formed about its entrance into the lake, within so short a period as 150 years.

The road now approaches the base of the *Niesen* (7,763′), a remarkable pyramidal peak everywhere conspicuous from the shores of the lake, commanding one of the finest panoramic views in the Alps. Since good paths and a tolerable inn near the summit have made the ascent easy, it is much visited. The most convenient way is that starting from *Wimmis*, a village with a castle on the rt. bank of the Simmen (§ 22, Rte. G), near its junction with the Kander. A char from Thun thither costs 5 or 6 fr., and a horse or mule from Wimmis to the top, 15 fr.; if kept overnight, 20 fr. A guide is unnecessary, as the way on this side is well marked. Those who take one

from Wimmis should not pay more than 4 fr., or 6 fr. if he be kept all night. The path from Wimmis lies at first SW., parallel to the Simmenthal. On reaching a torrent called Staldenbach, a signpost directs the traveller to turn to the l., and thenceforward the ascent is continuous, with many zigzags, and with but a very limited view, until, in about 4 hrs. from the village, the track reaches a small inn providing tolerable accommodation for the night. This lies about ¼ hr. below the summit, a narrow plateau giving room for about 50 persons, falling away towards the lake by a steep but not precipitous slope. The panorama of the whole range of the Bernese Alps from the Titlis to the Diablerets is more complete than from any other point of at all equal height, but the highest peaks are not seen to such great advantage as from the Faulhorn. Taken altogether, this deserves to rank amongst the finest views of the kind, and will thoroughly reward the labour of the ascent to those who are fortunate enough to see it under favourable conditions. A good new path descends from the summit to the Heustrichbad, near Mühlinen, where the traveller may find a vehicle either for Interlaken or Kandersteg.

Returning to the high-road from Thun to Frutigen, which was left at the bridge over the Kander, we come, about 1½ m farther on, to a point where the road divides. That leading to Interlaken is carried straight on near to the lake, while the road to Frutigen turns to the rt., mounting a little to the village of *Wyler*, nearly 6 m. from Thun, commanding a beautiful view of the lake, with the castle of Spiez (§ 24, Rte. A) conspicuous on its shore, and in the background the noble ranges of mountains on its opposite bank. Still finer is the view from *Aeschi*, standing a little to the l. of the road, about 2½ m. beyond Wyler. A char-road leads by that village to the shore of the lake near Leissigen, which shortens the way to Interlaken for travellers passing between that place and the Gemmi. The road descends a little to *Mühlinen* (Inn: Bär; good country inn), at the E. base of the Niesen, nearly 10 m. from Thun. Less than 1 m. farther is *Reichenbach* (Inn: Bär), where the opening of the Kien Thal (Rte. B) is seen on the l. with the peaks of the Blümlis Alp in the background. Beyond the village the road crosses to the l. bank of the Kander, and the Rinderhorn comes into view, followed by the twin summits of the Balmhorn and Altels, before the traveller reaches

Frutigen (Inns: Helvetia; Adler; both clean, comfortable, and reasonable), a neat and thriving village, rebuilt after a destructive fire in 1827. Here the valley divides. The main branch mounts to Kandersteg, while the W. branch, called Engstligenthal, leads to Adelboden and the Strubel Pass (Rte. E). From henceforward the ascent of the Kanderthal becomes rather steep for carriages, and a pedestrian will lose no time by continuing his route on foot. The remains of huge moraines, and other traces of glacial action, are conspicuous in the valley. On leaving Frutigen, the road crosses the Engstligenbach, and 1 m. farther returns to the rt. bank of the Kander. The mountains on either side are clothed with forest, and occasional glimpses of the snowy Alps are gained through openings in the range until the Doldenhorn finally asserts its supremacy among the peaks that enclose the head of the valley. A gradual ascent of 7½ m. leads to

Kandersteg (Inns: Victoria, in the village; Bär or Ours, at Eggschwand, 1½ m. beyond the village, on the way to the Gemmi; the reports of travellers are conflicting, but the majority seem to incline to the Bär; a new inn, Hôtel du Gemmi, is very well spoken of). The Victoria is most convenient for the excursion to the Oeschinen See, and the other houses for most of the other routes, for which this is the starting-point. The following are the

charges fixed for carriages and horses from Kandersteg:—

	fr.
To Thun—carriage with 2 horses	34
,, ,, with 1 horse	17
To Interlaken ,, with 2 horses	45
,, ,, with 1 horse	25
To Frutingen ,, with 2 horses	14
,, ,, with 1 horse	7
Horse or mule to Baths of Leuk	15
,, if starting after 10 A.M.	20
,, to Schwarenbach .	8
,, to Oeschinen See .	6
,, to foot of Tschingel Glacier in Gasterenthal	10

In fine weather a guide is not required to cross the Gemmi, except by mere novices. Those who can walk a little are advised to take the horse only to Schwarenbach, in whichever direction they travel. Delicate ladies should take a chaise-à-porteur. It is not advisable to ride down on the S. side. The fate of a French lady, who was thrown over the precipice in 1861, will probably deter future travellers from attempting the feat. The ascent from Leuk is not dangerous. Beware of checking the mule in difficult places.

Kandersteg (3,839′) is very finely situated in the midst of a circle of high peaks, most of which are visible from the village, or its neighbourhood. Nearest to the village is the massive range, lying between the Oeschinenthal and the Gasterenthal, whose highest summits are the many-pointed ridge of the Blümlis Alp (12,041′), and the Doldenhorn (11,965′). On the opposite, or S. side of the Gasterenthal, and more nearly adjoining the Gemmi Pass, is the group crowned by the peaks of the Balmhorn (12,100′), Altels (11,923′), and Rinderhorn (11,372′). Of the many excursions of which this is a convenient centre, the most attractive are those to the Oeschinen See (Rte. B), and the Gasterenthal (Rte. C). The ascent of the Blümlis Alp is noticed in Rte. B. The track to Adelboden over the Bonder Grat is described in Rte. G.

[To the enterprising mountaineer the most tempting expedition to be made from Kandersteg is the ascent of the *Doldenhorn* (11,965′), but as this must be reckoned as a decidedly difficult expedition, it should be attempted only by men in good training, and with first-rate guides. The first, and probably the only, ascent yet effected, is described in a well illustrated volume, published in German and English, by Dr. A. Roth, and entitled *Doldenhorn und Weisse Frau*. Dr. Roth and M. E. v. Fellenberg started from Kandersteg at 2 A.M. on the 30th of June, 1862, with Christen Lauener and Johann Bischof of Lauterbrunnen, Kaspar Blatter of Meyringen, and Gilgian Reichen of Kandersteg, as guides, besides Christen Ogi of Kandersteg, and Peter Lauener, a son of Christen, as porters. Reichen is highly spoken of, and is probably the best guide at Kandersteg. A previous attempt made by M. v. Fellenberg and two companions in the preceding month of May, in which the party reached the summit of the second peak, or *Klein Doldenhorn* (11,443′), had put the travellers upon the true track, by which alone, as it would seem, the highest summit is accessible.

The Doldenhorn is an irregular pyramid of which the sides facing SE. and SW. are precipices of rock of appalling steepness, too nearly vertical for snow to rest upon. The NE. side, best seen from the Oeschinen Alp, shows a front of shattered glacier and ice slopes, resting on impracticable ledges of rock. It is on the NW. side alone that the slope is somewhat less formidable, and by this face, which is turned towards Kandersteg, the attempt was made. Westward from the highest peak extends a ridge which rises into several peaks, following each other in descending order—the Klein Doldenhorn, the Doldenstock, and the double-pointed Fisistock. The way to the summit is by the glacier lying on the N. side of this ridge. The glacier is best attainable by the Byberg Alp, reached in 1 hr. from Kandersteg

by a path which diverges from the Gemmi road at a saw-mill above the village. Thence the course bore somewhat to the l., and in 1¾ hr. the travellers reached the base of the Spitzstein, a shattered mass of limestone projecting from the glaciers that cover the NW. slope of the mountain. The ascent was continued by a steep moraine lying along the ridge of the mountain which overlooks the Oeschinen See, and then over snow-slopes, till, in about 5 hrs., they gained the upper glacier plateau, from whence rise the peaks of the Great and Little Doldenhorn. Here the difficulties commenced. The glacier is riven by several enormous crevasses, and the traveller who diverges somewhat to the rt to avoid them, is threatened by the fall of impending masses of ice and snow that hang from the ridge of the Little Doldenhorn. Dr. Roth considers this part of the ascent so dangerous that it can be undertaken only under unusually favourable circumstances. After gaining the ridge between the two peaks, the summit was attained, after a laborious climb through soft snow, in 9 hrs. from Kandersteg.]

The char-road leading to the Gemmi is carried for 1½ m. beyond Kandersteg to the hamlet of Eggschwand. The new Inn (H. du Gemmi) is met first, and about ¼ m. farther the Bär, rebuilt in 1865. The stream issuing in a fine cascade from the *Ueschinenthal*, a short, wild glen, joins the Kander from the SW., and the bridle-path to the Gemmi crosses to the l. bank of the main stream at the bridge of Klus. A little higher up is the junction of the chief source of the Kander, flowing from the Gasterenthal, with the lesser stream that descends from the S. The old path leading to the Gemmi, turns away from the stream, and bears to the rt. up the steep pine-covered slope of the Gellihorn, while another misleading path keeps pretty near to the torrent. A new path, intermediate between those above noticed, is now used in ascending to the Gemmi. It gives a fine view into the Gasterenthal. Above the steepest part of the ascent, the track passes the boundary between the Cantons Berne and Valais, the latter here trespassing beyond the watershed separating the basin of the Rhone from that of the Aar. After passing the châlets of Winteregg, the traveller reaches a bare and wild tract of Alpine pasture, partly covered with rocks, fallen from the surrounding peaks. The Altels and Rinderhorn, hiding the higher summit of the Balmhorn behind them, rise very grandly from this dreary basin, wherein stands the solitary inn of *Schwarenbach* (6,775′), nearly 4 hrs.' walk, ascending from Kandersteg. The inn here has been taken by the well-known Melchior Anderegg. It is small, but clean, and fairly well managed by his wife and his brothers, Andreas and Peter, who are good local guides.

The ascent of the *Altels* (11,923′) has been frequently made of late years, and well deserves the exertion. A good guide, with the usual requisites of rope and ice-axe, are indispensable, along with perfect steadiness, as the snow-slope is extremely steep and long, and a slip would be almost certainly fatal.

The following notes may be useful to future travellers:—

'Turn off from the Gemmi track, a short distance below Schwarenbach, just before the stream from the Zagen Glacier is reached in the ascent from Thun; mount through a small wood of stunted pines, and turn to left in order to avoid a precipitous ledge of the mountain. Then go straight up the rough side of the mountain, keeping as near as possible to the right side (over the Zagen Glacier). After reaching the snow, keep the same direction. In fact, all that is needed is, never to go far from the edge of the precipice, on the Schwarenbach side. When the snow is much melted (as in 1859) it is possible to ascend almost all the way by a sort of causeway of bare rock between the snow and the edge of the

precipice. The point with the cross is not the summit, the highest point is at the other end of the ridge. Time: from Schwarenbach Inn to foot of mountain, 1½ hr.; to snow, 2 hrs. 37 min.; to summit, 2 hrs.; descent of snow, 1 hr. 5 min.; of rest of mountain, 1 hr. 45 min.—[T. G. B.]

The *Rinderhorn* (11,372′) has been ascended from Schwarenbach by Mr. G. Studer. The ascent is of the same character as that of the higher and more tempting peak of the Altels.

The *Balmhorn* (12,100), the highest of the three associated peaks, rather less difficult than the Altels, and commanding a still wider view, was first ascended in 1864 by Mr. and Miss Walker, with Melchior and P. Anderegg. Keeping somewhat to the rt. of the Altels, the way is over a small glacier, leading to the ridge connecting the Rinderhorn with the Balmhorn, then along the arête to the highest point. In a second ascent by Mr. W. E. Utterson, with four companions, of whom two were ladies, the party, guided by Andreas Anderegg, succeeded in descending direct to the Baths of Leuk.

Andreas and Peter Anderegg expect 20 fr. for the ascent of each of the higher peaks.

Rather more than ½ hr. of rough but not steep ascent from Schwarenbach is required to reach the *Dauben See* (7,328′), a dreary sheet of ice-cold water, derived from the melting of the Lämmeren Glacier, surrounded by seemingly bare rocks, that afford a tolerable harvest to the botanist. The geologist will notice numerous belemnites. The lake is drained only by subaqueous fissures in the limestone rock, but is supposed to feed a stream which bursts out on the S. side of the Gasterenthal. The Lämmeren Glacier stretches to the W., between the *Daubenhorn* (9,449′) and the Lämmernhorn (?) (10,220′), which separate it from the valley of the Rhone, and the *Steghorn* (10,332′), an outlier from the mass of the Wildstrubel (Rte. H). But a short way above the lake, and rather more than 1 hr. from Schwarenbach, is the summit of the

Gemmi Pass (7,553′). the lowest and most accessible in the long range, extending from the Grimsel to the Diablerets. The striking view, best seen from a point a few yards l. of the pass, is alone sufficient to recompense the slight labour of the ascent. The annexed outline will serve to show the position of the chief summits of the Pennine Alps visible from the pass, and usually misnamed by guides. The extraordinary path by which the descent is effected on the S. side must always render this one of the most remarkable passes in the Alps. To the practised mountaineer it is not altogether a new thing to undertake the descent of a precipice of nearly vertical rock, but it does not often happen that such a precipice is fully 2,000 ft. in height, and there is none other which is made accessible, as this is, by a perfectly safe and convenient path, daily traversed in summer by men, women, and beasts of burden. The head of the valley of the Dala above the Baths of Leuk is enclosed by a wall of jurassic limestone, from 2,000 to 4,000 ft. in height, connecting the Daubenhorn with the Rinderhorn. In one place immediately below the pass this wall is cleft by a deep indentation running from the top to the bottom. Although the rocks do not appear to be more accessible here than elsewhere, this break in the face of the barrier has afforded the means of scaling it by a practicable path, which was executed by Tyrolese workmen, employed by the Cantons Berne and Valais, between 1737 and 1741. This is chiefly carried along the W. side of the cleft by zigzags, running so nearly over each other that it is rarely possible either to see the way already traversed, or the path by which the descent is to be continued. The track is in most places 5 ft. in width, and is guarded at intervals by a low wall or by rails, so that it is perfectly safe for foot-passengers, however un-

PANORAMA SEEN FROM THE SUMMIT OF THE GEMMI PASS.

(From a Sketch by F. E. Blackstone.)

used to mountain travelling. The fatal accident already referred to proves that there is risk in riding down a place where a slip of the animal may throw the rider over the verge to certain destruction; but in riding up the pass such an accident is all but absolutely impossible, and it is constantly traversed in this way by hundreds of travellers. The descent may be easily made in less than 1 hr.—the ascent requiring $1\frac{3}{4}$ hr.—and from the base of the precipice an easy $\frac{1}{2}$ hr. takes the traveller to the

Baths of Leuk (Inns: H. des Alpes, not well managed, but perhaps the best for tourists; Bellevue; H. de France, good; in all these the charge *en pension* for breakfast and dinner is 6 fr. a day. In the second-rate houses—Maison Blanche; H. de l'Union; H. Brunner; Croix Fédérale—the charge is 5 fr. a day). Strangers must be careful not to confound the baths with the town of Leuk, in the valley of the Rhone, 8 m. distant. The thermal springs, which have made this place famous, were known and resorted to in the middle ages, chiefly for the cure of scrofula and cutaneous diseases. They seem to have lost somewhat in importance during the present century, owing to the competition of other waters possessing similar qualities. The peculiarity which chiefly strikes strangers is the practice of congregating the patients in large public baths, wherein a miscellaneous company of both sexes passes several hours daily, beguiling the tedious hours by conversation, and such amusements as are practicable to persons immersed up to the chin in water. Floating tables are used to carry newspapers, coffee-cups, chessmen, &c. It is needless to say that the strictest decorum is observed by the bathers; and strangers, who are freely admitted to the galleries surrounding the baths, will recollect that the company, oddly disguised in long bathing dresses of dark woollen stuff, is the same that may be met at a later hour at the *tables d'hôte* of the hotels.

There is an omnibus daily to Sierre by Susten, on the Simplon road. The following tariff for carriages, mules, guides, and porters, is fixed by the Cantonal authorities:—

	1 horse	2 horses
	fr.	fr.
Carriage to Susten . .	10	15
„ to Sierre . .	16	25
„ to Sion . .	25	40
„ to Visp . .	22	35
„ to Brieg . .	30	40

	fr.
Horse or mule with guide to Kandersteg	20
„ to place called Stock . .	15
„ to Schwarenbach . .	10
„ to summit of Gemmi Pass.	6
„ to Leuk	$6\frac{1}{2}$
„ to Sierre	8
„ to Turtman . . .	$8\frac{1}{2}$
„ to Torrenthorn . . .	11
„ to Guggerhubel . . .	6
„ to Fluh Gletscher . .	6

For the shorter excursions the charge is 3 or 4 fr.

Porters carrying chaises-à-porteur or Tragsessel—2 men suffice for a child, 4 men for an ordinary adult, 6 men for unusually heavy persons—are each entitled to the following rates:—

	fr.
To Kandersteg	7
„ Schwarenbach . . .	5
„ summit of Gemmi Pass .	4
„ Leuk	4
„ Turtman or Sierre . .	5

A porter carrying a moderate load of luggage:—

	fr.
To Kandersteg	6
„ Schwarenbach . . .	4
„ summit of the Gemmi Pass .	3
„ Leuk	4
„ Turtman or Sierre . .	5

Apart from the rates specially laid down in the tariff, the daily charge for a horse with a man to lead it is 10 fr. and for a porter carrying luggage, 5 fr. The rather heavy tolls payable for horses, &c., passing by the new road down the valley of the Dala are included in the above charges. The rates fixed for the hire of horses are inclusive of the return to the Baths, except that persons crossing the Gemmi and returning from Kandersteg on horseback pay 2 fr. additional towards the maintenance of the track.

Apart from the inducements offered by the waters to the many Swiss and French visitors who resort thither, chiefly in the months of July and August, the Baths of Leuk, standing 4,642 ft. above the sea, in the immediate neighbourhood of many Alpine summits ranging from 9,000 to 12,000 ft., afford excellent head-quarters to the tourist and the mountaineer. The head of the valley of the *Dala* is almost completely hemmed in by precipitous limestone rocks; and the torrent is formed in part by the melting of some small glaciers, but mainly from springs that burst out near the base of the rocks, to which the copious sources that supply the Baths largely contribute. The valley is enclosed on the E. side by a lofty mass, whose highest summits are the *Resti Roth-horn* (9,761′) and the *Torrenthorn* (9,679′), forming a promontory from the range connecting the Balmhorn with the central group of the Oberland Alps. On the l. bank of the Dala below the Baths is an almost vertical wall of limestone, called the Wandfluh, which is in truth the lowest course of the gigantic masonry that sustains the above-mentioned peaks. On the opposite side of the valley another steep range, an outlier from the Daubenhorn, cuts off access from the W. into this secluded valley.

The excursions to be made from the Baths are numerous and interesting. There is a pretty planted walk, 1½ m. long, intended for patients unable to take more active exercise. The fall of the Dala, about 1½ m. above the Baths, is worth a visit, and the traveller may follow up the course of the stream to the châlets of Maïng, and to the *Dala Glacier* at the S. base of the Balmhorn, 3 hrs. from the Baths. It does not appear that any serious attempt has been made to effect a pass in this direction to the Gasterenthal.

The passes leading from the Baths of Leuk to Ferden or Kippel, in the Lotschenthal, have lately attracted the attention of travellers, and are described in Rte. D.

One of the most frequent excursions is to the *Leitern*. A path along the l. bank of the Dala leads in 2 m. from the Baths to the base of the Wandfluh, the great wall of rock already mentioned. On the slopes above the rocks is the hamlet of Albinen. The ordinary way from the Baths to Albinen lies up the face of the Wandfluh by means of 8 ladders fastened to the rock by wooden pegs. Though these seem unsteady, there is neither risk nor difficulty in the ascent. The ladders serve as the ordinary means of communication, and are constantly used by the men, women, and children of the valley; but strangers who have not very steady heads may better decline the feat. Albinen is 2 hrs. from the Baths. A steep descent leads thence to Inden in 1 hr., or, if bound for the Lötschenthal, the traveller may reach Ferden in 4 hrs. by Jeizinen and the Faldum Pass (Rte. D).

The *Guggerhubel*, reached in 2½ hrs. by a steep path, or by a rather longer mule-track, commands a fine view over the Rhone valley and the Pennine Alps. A more extensive view is gained by ascending ¾ hr. farther to the summit of the *Galmstock* (8,081′). But those who are favoured with fine weather have within reach of the Baths a far more remarkable panoramic view, and at the same time very easy of access. This is gained from the *Torrenthorn* (9,679′), also called the *Maïnghorn*, the highest point in the range immediately E. of the Baths. The ascent begins close to the Hôtel des Alpes, mounting towards the E. in zigzags over steep slopes of pasture. On reaching a belt of trees the path turns to the rt., or S., and is carried for some distance through a thick pine-wood. Then follows a steeper climb over rock, but the path is good, and ladies may safely keep to their horses. Above this the forest becomes more sparse, and the trees gradually dwindle, till a gate in a low stone wall opens upon a broad bare expanse of Alpine pasture. This is traversed for 2 hrs. of gradual ascent until the

mountain gradually contracts to a mere ridge, sloping away very rapidly to the rt. A wooden seat and rough table usually bear evidence of the luncheon of preceding visitors, and ladies are invited to descend from their mules, and to proceed a few yards farther on foot. In a quite unexpected way the ridge comes abruptly to an end, and travellers find themselves on the summit of the mountain, commanding a noble view which is not limited to the great range of the Pennine Alps from the Monte Leone to Mont Blanc, though this includes the grandest objects in view. The snowy range crowned by the Bietschhorn (12,969′), dividing the Lötschenthal from the Rhone, is very conspicuous, and farther to the l. appear all the highest peaks of the Oberland, rather too much crowded together to be seen to the best advantage. Near at hand a considerable expanse of névé, enclosed by shattered towers and pyramids of rock, descends to the N., giving birth to the small Maïng Glacier. The ascent requires about 3 hrs., and the descent 2 hrs.; but with mules more time must be allowed in returning.

Travellers who have reached the Baths of Leuk by the Gemmi usually descend into the valley of the Rhone, and there join the great road of the Simplon leading from Martigny to Brieg, described in § 21, Rte. A. Should they be bound for the Lower Valais, they may best proceed direct to Sierre, but if their destination be Zermatt, or the Upper Valais, they may reach Turtman by Susten.

A new road has been completed within the last few years, by which carriages descend from the Baths to *Inden*, 4½ m., but the old mule-path enables the pedestrian to shorten the way. A toll of 15 cent. is payable by foot-passengers, and 2 fr. for each horse or mule. After passing Inden, the road to Susten descends the very steep rocky slope above the rt. bank of the Dala. The rocks rise precipitously on the rt., and the road is in one place roofed over to protect it from falling stones. This is the way taken by nearly all travellers, and the only one fitted for an ordinary carriage; but those bound for Sierre on foot or horseback may follow a track (passable also for light chars), that issues from the gorge of the Dala at a point where a very fine view is gained over the broad valley of the Rhone. The descent lies by Varen and Salgesch, and after crossing the Raspilly torrent, *Sierre* [Inn: Soleil, good] (§ 21, Rte. A) is reached in 9 m. from Inden, or 13½ m. from the Baths.

The carriage-road descends to a fine new bridge over the Dala, and is then carried along the l. bank till, in 7½ m. from the Baths, it leads to the little town of

Leuk (Fr. *Louèche*), with a good country inn — Kreuz — very picturesquely placed on the rt. bank of the Rhone. Though now an insignificant place, it once boasted of two castles, whose ruins overlook the place, and several public buildings. A short descent leads to a covered bridge over the Rhone, and in ½ hr. from Leuk the high-road of the Simplon is reached at *Susten*, a small place with a very nice new inn, about 3 m. from *Turtman* [Inns: Poste, good; Soleil, fair] (§ 21, Rte. A). The omnibus between Sierre and the Baths passes by Susten, but few travellers will desire to travel by a vehicle which allows them to see little or nothing of the fine scenery of the valley of the Dala.

Route B.

THUN TO KANDERSTEG BY THE KIENTHAL — ASCENT OF THE BLÜMLIS ALP.

	Hrs' walking	Eng. miles
Reichenbach . .	3½	10½
Tschingel . .	3½	10
Dündengrat . .	3	7½
Kandersteg . .	3½	9
	13½	37

This route affords to the active pedestrian a pleasant alternative to the ordinary char-road from Thun to Kandersteg, described in the last Rte. As there is no desirable stopping-place in the Kien Thal, it is advisable either to sleep at Mühlinen or Reichenbach, or else to start extremely early from Thun, engaging a vehicle as far as the last-named place. There is a very rough char-road from Reichenbach to Tschingel, but probably no time would be saved by taking a vehicle. The track over the Dündengrat being scarcely traced, it is not advisable to go without a guide. The road from Thun to Reichenbach is described in the last Rte. Less than a mile from the latter village is the hamlet of Kien, at the junction of the Kienbach with the Kander. The *Kien Thal* bears down the drainage of the N. side of the range of the Blümlis Alp, and its upper end presents far grander scenery than that visible from the main valley of the Kander. At the small village called *Kienthal*, 2 hrs. from Reichenbach, a torrent descending from the lateral glen, called *Spiggengrund*, joins the Kienbach. By that way lies a rough track leading to the valley of Lauterbrunnen (§ 24, Rte. E). About 4 m. higher up is the pasturage of Tschingel, with several well-built châlets, which might afford tolerable quarters in case of need. Near at hand is a pretty cascade of the Dündenbach. The valley becomes more Alpine in character as it approaches the snowy peaks that enclose its head. Three torrents join to form the Kienbach. That flowing from the E. descends from the Sefinen Furke, leading to the valley of Lauterbrunnen (§ 24, Rte. F). The central, and principal stream descends from the *Gamchi Glacier*. This lies in a great hollow backed by the E. ridge of the Blümlis Alp, and shut in on the W. by the *Wilde Frau* (10,702′), and on the E. by the *Büttlassen* (10,463′) and the *Gspaltenhorn* (11,260′). By this glacier, and by the Gamchilücke (§ 24, Rte. F), it is practicable to reach the upper plateau of the Tschingel Glacier, and descend thence to Kandersteg by the Gasterenthal, to the Lötschenthal by the Peter's Grat, or to Lauterbrunnen by the Tschingeltritt.

The third torrent, descending about due N. into the head of the Kien Thal, is that which leads to the Dündengrat. The valley is left at the Steinen Alp, a group of good châlets; thence the ascent is steep, passing in succession two groups of châlets—Untere and Obere Bundalp. At the uppermost of these, M. de Fellenberg and party slept for three nights when engaged in unsuccessful attempts upon the Blümlis Alp, and had to combat most extortionate demands from their inhospitable host. Towards the top of the pass there are usually large patches of soft snow, causing some delay, and nearly 4 hrs. must be allowed for the ascent from Tschingel to the summit of the *Dündengrat*. This lies between the Bundstock (9,045′) and the Schwarzhorn (9,121′). The height of the pass is not marked on the Swiss Federal Map. With boiling-water apparatus Mr. Jacomb found the height of 8,619 ft., which must be much nearer the truth than 7,451 ft., the measurement assigned by M. Joanne. The view from the summit is one of unexpected grandeur. To the S., and close at hand, the many-peaked Blümlis Alp (12,041′), followed by the Freundenhorn (11,050′), and the Doldenhorn (11,965′), may rival many more famous scenes in the Alps. To the E. and NE. the summit of the Jungfrau is seen towering above the range connecting the Gspaltenhorn with the Schilthorn above Lauterbrunnen. In the NW. a portion of the plain of Switzerland is seen above the mountains that enclose the Kien Thal. On the l. hand during the descent is the *Blümlis Alp Gletscher*, occupying, according to a fanciful tradition, the site of an alp which once fed large numbers of cattle. A rough and rather steep descent leads to the Ober Oeschinen Alp, commanding a fine view of the Wildstrubel

range, and of the beautiful little lake of Oeschinen, lying deep in the valley below, amidst precipices of rock and dark masses of pine forest. The descent to the lake is by a mere goat-track, carried along narrow ledges of rock, leading to the lower châlets, and then down to the

Oeschinen See. This little sheet of water, secluded from the outer world by impassable ridges that rise many thousands of feet above its shores, and half buried amid forests that are saved from the axe by the difficulty of obtaining access to them, in whose still waters snowy Alpine peaks are constantly mirrored, offers a scene not surpassed by any other in the Alps. Those who may not select this route to approach Kandersteg, should not fail to make the excursion to the lake, and if favoured by weather they will do well to make the ascent to the summit of the Dündengrat, returning to the village and so enjoying the morning and evening aspects of the scenery. 'Majestic splendour of eternal snow; savage grandeur of the vast glacier abysses; sweet loveliness of the calm lake and fragrant pines; never-ceasing decay of the barren, grey, weather-beaten rocks; such are the characteristics of the Oeschinenthal, and in these contrasts lies its charm.'—[A. R.] The descent from the lake through the Oeschinen Thal to Kandersteg is a walk of about 1 hr.

[The ascent of the *Blümlis Alp*, also called Frau, being best undertaken from the Oeschinen Alp, may be briefly noticed here. It is not properly a single mountain, but rather a ridge of great height, cut away in precipices on the SE. side, surmounted by 4 principal peaks, in the following order, reckoning from NE. to SW.:—*Morgenhorn* (11,733′), *Weisse Frau* (12,011′), *Blümlisalphorn* (12,041′), *Oeschinenhorn* (11,457′). To the SW. of the last peak, and between it and the Doldenhorn, is a minor summit—the Freundenhorn (11,050′). In front of the main ridge, as seen from the NW., *e g.* from the Dündengrat, are seen three minor peaks which project as steep islets of rock from the great glacier-fields that cover that side of the mountain. These are the *Wilde Frau* (10,702′), *Blümlisalpstock* (10,564′), and *Oeschinen Rothhorn* (10,827′). The names adopted on the Federal Map, and those proposed by Dr. Roth, are here followed, saving the addition made to the last, in order to avoid confusion with numerous other mountains bearing the same name. The two main feeders of the Blümlisalp Glacier flow downwards through the openings between the three last-named summits, but a short branch from the ice-stream that descends between the Wilde Frau and the Blümlis Alpstock turns to the N., and flows into the head of the Kienthal. The two highest summits of the Blümlis Alp have each been once attained. The highest peak—Blümlisalphorn—was ascended in 1860 by Mr. Leslie Stephen, accompanied by Messrs. Liveing and Stone, with Melchior Anderegg and Pierre Simond of Argentière as guides. Starting from the châlets of the Oeschinenalp at 2 A.M., they reached the ridge near the Dündengrat at 4.15. Then mounting over snowfields, and the glacier lying between the Wilde Frau and the Blümlisalpstock, they passed behind, or S., of the latter summit, and gained the depression between the Oeschinen Rothhorn and the highest peak at 6.10. 'From this point an arête (visible from Kandersteg) rises to the highest point, strongly resembling the last arête of the Jungfrau, but longer. We reached the top at 8 A.M., and had a grand view down the cliffs to the Tschingel Glacier, as well as a very fine view over the Swiss plains, and a general panorama resembling that from the Altels, returning easily to Kandersteg by 2 P.M.'—[L. S.]

The ascent of the Weisse Frau, 30 ft. lower than its rival, was first effected in 1862 by Dr. Roth and M. v. Fellenberg, and is described in the interesting volume noticed in Rte. A.

Two previous attempts, made in 1859 by M. v. Fellenberg with two friends and four guides were defeated by bad weather; a M. Willener, from Berne, likewise failed in 1861. Under favourable circumstances the expedition involves no unusual difficulty except the passage of an extremely narrow and steep arête of ice, which leads to the actual summit. The way is the same as that above described as leading to the Blümlisalphorn, save that instead of passing behind the Blümlisalpstock it is necessary to keep straight on towards SE. till a small patch of rock is reached which projects from the glacier just at the base of the Weisse Frau. The ascent is steep, but not difficult, except the final arête, which requires perfect steadiness and much caution on the part both of guides and travellers. The actual summit is a very narrow ridge of frozen snow, partly overhanging the precipice on the side of the Tschingel Glacier. A vigorous blow of the alpenstock sufficed to detach a huge fragment, which fell down the precipice to the glacier below. Starting before daylight from Kandersteg, Dr. Roth and his companion descended by the Kienthal, and reached Mühlinen at night, after an expedition of 19 hrs.]

Route C.

KANDERSTEG TO TURTMAN, OR VISP, BY THE LÖTSCHEN PASS.

11 hrs.' walk to Turtman. 13 hrs. to Visp.

This is a much rougher and more laborious way than that by the Gemmi Pass (Rte. A), nor can it be said to rival the descent from that pass to the Baths of Leuk, but as a substitute for those who wish to vary the route it is well worthy of attention. The scenery of the Gasterenthal, and the view from the summit of the pass are extremely fine, and there is to mountaineers the further inducement of the ascent of the Hockenhorn, which may be combined with the pass from Kandersteg to Ferden. Peter Künzi of Selden, in the Gasterenthal, is a good guide. In fine weather a practised mountaineer may dispense with a guide.

As mentioned in Rte. A, the junction of the Gasterenthal with the Kanderthal is near to the bridge of Klus, ½ hr. above Kandersteg. The path to the Gasterenthal here leaves the bridle-track to the Gemmi, and enters a savage and grand defile, cut deeply into the rocks which form the bases of the Altels and the Doldenhorn. Huge blocks, in part ice-borne from the head of the valley, in part fallen from the cliffs on high, almost bar the passage through which the torrent brawls its way. About 2½ hrs. from Kandersteg, rendered short by the extreme grandeur of the scenery, the ascent commences on the S. slope of the valley, near the châlets of Im Selden (5,043′) (§ 24, Rte. F). The slope is very steep, almost altogether grass-grown, and 2 hrs. are required to reach the base of the small glacier which descends from the col. The views of the head of the valley are here very grand. In some places may be seen remains of a paved mule-track. At a period whose exact date is not preserved, before the Gemmi was made easy of access, and before the glaciers had increased in this part of the Alps, as they undoubtedly have in the last two or three centuries, this appears to have been a frequented pass, perhaps at that time the only one practicable for beasts of burden between the Grimsel and the Canton Vaud. The ascent is continued by the moraine and slopes of débris on the l. bank of the glacier till this becomes less crevassed. After taking to the ice it is well to keep on the W. side of the glacier till the slope becomes gentler and the crevasses disappear. About 5¾ hrs. from Kandersteg, exclusive of halts, must be allowed for reaching the *Lötschen Pass* (8,796′), often called Lötschenberg, commanding

a noble view of the snowy alps on the S. side of the Lötschenthal, and of the more distant peaks that encompass the valley of Zermatt. [The mountaineer who has started early, and does not propose to go farther than Kippel, may reach the summit of the *Hockenhorn* (10,817′), also called Schildhorn, lying ENE. of the pass, and commanding a grand panoramic view of the Bernese and Pennine Alps. The ascent will add fully 2½ hrs. to the day's walk. In approaching the peak from the Gasterenthal, the glacier should be traversed at once, and from its E. side the traveller may ascend directly to the summit. The descent may be made to the highest point of the Lötschen Pass, but care and a good guide are requisite, as there are steep slopes of frozen snow in the way.] Snow usually lies at the top of the pass, but a few minutes' walk takes the traveller to the long slopes, at first bare and stony, then of Alpine pasture, that lead down towards the Lötschenthal. The noble views of the Bietschhorn and the head of the valley relieve a descent which would otherwise be monotonous. A fine larch wood is traversed, and in 2½ hrs., descending from the pass, the traveller reaches

Ferden, a very poor-looking hamlet, with a wretched inn. Those who would reach good night-quarters will turn to the rt., and push on to Gampel, or Turtman. Travellers bound for the upper end of the Lötschenthal and the grand passes leading out of it, should go to Ried, about 3½ m. above Ferden, where a little mountain inn was opened last year. There is no fresh meat to be had in the valley. The *curé* of Kippel receives travellers, but the accommodation is not good. See § 24, Rte. G. The very grand scenery of the Lötschenthal would doubtless make it a favourite resort of mountaineers if better accommodation were provided for strangers. The passes leading to the upper end of the Lötschenthal are described in § 24.

A char-road has been completed for the greater part of the way from Ferden to the valley of the Rhone, but the descent is so steep that it is not likely to be of much service to travellers. The way lies on the rt. bank of the Lonza, but before reaching the chapel of Goppenstein, repeatedly destroyed by avalanches and as often rebuilt, the valley turns due S., and the view of the head of the valley is lost to sight. The botanist may find *Echinospermum deflexum* in this part of the valley. The road crosses to the l. bank, passes the chapel, and descends through a barren rocky gorge. The scenery is wild rather than grand; a considerable fall of the Lonza is passed on the rt., but as there is no object of special interest in view, it is with a feeling of relief that the traveller reaches the last steep descent that leads him down to the valley of the Rhone. The village of *Gampel* (Inn: zum Lötschenthal), with smelting-works connected with a mine that lies high up on the mountain, stands just at the point where the Lonza breaks out from its native valley, the hamlet on the l. bank of the stream being called Steg. This is reached in 2 hrs. from Ferden.

The traveller bound for Turtman should follow the char-road from Steg to the bridge over the Rhone, less than ½ m., and will thus reach the Simplon road about 1½ m. E. of *Turtman* (Inns: Poste, good; Soleil, fair), more fully noticed in § 21, Rte. A. The pedestrian going to Visp may best keep to the rt. bank of the Rhone, passing *Nieder Gestelen* and *Raron*. Beyond the latter village a bridge over the Rhone enables him to join the Simplon road half-way between Turtman and *Visp* (Inns: Soleil, good; Poste, much improved, obliging landlord), about 8 m. from Steg.

Route D.

BATHS OF LEUK TO FERDEN OR KIPPEL.

Until the last few years the ordinary way from the Baths of Leuk to the Lötschenthal involved a considerable detour. Travellers descended the gorge of the Dala from the Baths to the town of Leuk, thence followed a char road by the rt. bank of the Rhone to Gampel, and there crossing the Lonza to Steg, ascended by the road leading from that place to Ferden. Three passes leading by a much more direct, if not shorter, course are now known to Alpine travellers; and they all offer the advantage of being easily connected in the same day's walk with the ascent of the Torrenthorn. The mass of mountain lying between the Baths and the Lower Lötschenthal may be considered as a promontory projecting southward from the main range of the Bernese Alps. The watershed is marked by a ridge, extending SSW. from the *Ferden Rothhorn* (10,258′) and connecting that peak with three high points, lying very near together, whose highest and central point is the *Resti Rothhorn* (9,761′). Southward of the latter peak is the *Laucherspitz* (9.383′), and beyond this the *Faldum Rothhorn* (9,311′). To the S. of this the mass subsides rapidly towards the valley of the Rhone. The Torrenthorn (9,679′), so often visited from the Baths of Leuk (Rte. A) rises to the W. of the ridge connecting the above-named peaks. Though so easy of access from the W. side, this is extremely steep in other directions, and none but practised mountaineers, with competent guides, should take the summit on the way to one or other of the passes named below.

1. By the *Faldum Pass*. This is the lowest and apparently the easiest of the passes here described. It is most easily reached by the Leitern (Rte. A) and the hamlet of Albinen, 2 hrs. from the Baths. The pass lies between the Faldum Rothhorn and the Laucherspitz, and is probably about 8,000 ft. in height. It is reached by ascending a slope of débris. From the summit a rocky plateau slopes gently to the E., and as the traveller descends into the *Faldumthal* he finds a track on the l. bank of the stream leading to the châlets of the Faldum Alp. *Kippel* (§ 24, Rte. G) is reached in 4 hrs. from Albinen, or 6 hrs. from the Baths of Leuk. See a paper in the 'Alpine Journal,' vol. ii. p. 91, by Mr. Brooksbank, who on his way took the summit of the Torrenthorn, and returned along the ordinary path from Leukerbad for about 18 min., then descending steep slopes of débris and bearing constantly to the l. till he joined the ordinary way from Albinen to the col.

2. *By the Resti Pass*. We give this name provisionally to the pass between the Laucherspitz and the Resti Rothhorn, sometimes traversed by local chamois hunters. It leads into the *Restithal*, a glen descending eastward, parallel to the Faldumthal. No particulars respecting it have been received by the Editor.

3. *By the Ferden Pass*. The *Ferden Pass*, also known as the *Schneidschnur Pass*, is higher and rather more difficult than those above-mentioned, probably also more interesting. The first reliable information respecting this pass is due to the Rev. J. E. Millard, who traversed it in 1864; and the writer has received further particulars from Mr. Thursfield, who with Mr. Latham took this way in 1865 from Kippel to the Torrenthorn, having as guides Christian Almer, and Christian Ogi of Kandersteg, a man well acquainted with this district.

On leaving Leukerbad by a path along the l. bank of the Dala the traveller reaches in about ¾ hr. the châlets of the Flüh Alp. The way then crosses a low ridge bounding the hollow enclosing the lower end of the Dala Glacier. A long and steep ascent, chiefly over slopes of débris to the rt. of the traveller's previous course, leads to the pass (8,625′?) in less than 4 hrs. from the

Baths. The view extends in one direction to Mont Blanc, and on the opposite side to the peaks enclosing the Lötschenthal. A very steep descent leads to a small glacier at the head of the Ober Ferdenthal. A rough track through that glen leads past the Kummenstaffel, and joins the path from Ferden or Kippel to the Lötschen Pass. To reach the Ober Ferdenthal from the Torrenthorn it is necessary to descend to the Maïng Glacier, cross the ridge between this and the Ober Ferden Glacier, and so join the ordinary course. This way is sometimes rather difficult.

Another way between Leuk and Kippel is indicated in the 'Alpine Journal' by Messrs. Malkin and Martineau. They mounted from Kippel to a pass at the extreme NE. end of the Dala valley, by a rock (called Milderstein?) visible from Leukerbad. Instead of descending thither, they made a second pass to Schwarenbach, between the Rinderhorn and Plattenhorn.

Route E.

THUN TO SIERRE, BY ADELBODEN, AND THE STRUBELECK.

It appears certain that at one time a pass from Adelboden to Sierre in the Valais was once well known to the inhabitants on either side, but has been allowed to fall out of use and memory in recent times. Mountaineers attempting the pass should take a local guide from Adelboden.

At the village of Frutigen, $4\frac{3}{4}$ leagues from Thun (Rte. A), the *Engstligenthal*, descending from SSW., joins the main valley of the Kander. It is a narrow glen, rarely traversed by strangers, but containing many scattered hamlets. The lower part is rich with meadows and forests, the upper end rugged and stern. The name *Adelboden*, derived from a great tournament which tradition declares to have been held here, is sometimes applied to the entire valley, but usually to a group of hamlets reached by a charroad in 3 hrs. from Frutigen. The chief group of houses, where stands the church and a poor inn (Bär), is 4,452 ft. above the sea. The paths to Kandersteg and An der Lenk are described in Rte. G. About $1\frac{1}{2}$ hr. above the village is a fine fall of the Engstligenbach. The head of the valley due S. of Adelboden is enclosed by ranges of precipitous rocks, surmounted by glittering pinnacles of ice apparently presenting an insuperable barrier to further progress. The hunters of the valley are acquainted with at least one passage by which the rocks may be scaled. It is said that the highest châlets near the foot of the rocks are 4 hrs. from Adelboden, and 2 or 3 hrs. more should probably be allowed for the ascent of the rocks. By this apparently difficult route, and by a pass at the summit called *Strubeleck*, the traveller will gain access to the great ice plateau sloping to the E. from the summit of the Wildstrubel towards the Gemmi, which is mainly occupied by the extensive Lämmeren Glacier (Rte. H). The ice-field is not, however, quite continuous; it is divided by a transverse ridge, and one portion falls slightly towards the S., sending its drainage down towards the Raspilly torrent which joins the Rhone near Sierre. When the traveller has gained the upper level of the Lämmeren Glacier he should cross it towards the SW., steering for a slight depression in the ridge which bounds it on that side. This is the *Lämmerenjoch* of Mr. F. J. Hort, who crossed this way from Schwarenbach to Sierre, and apparently also the Col du Schneehorn of some Swiss guide-books, where this pass is evidently not described from personal observation.

'The view from the Col is very fine and extensive. From a point a little to the S. there is a steep descent to the large and very remarkable almost flat basin of névé called *Glacier de la Plaine Morte*. There appeared to be three possible outlets on the S. side; the middle one we (including M.

Anderegg) thought the most promising. It proved quite easy; but some little way down towards the head of the valley we were stopped by finding ourselves at the edge of a range of precipices like those of the Gemmi, but smaller. We lost some time in seeking a way down; but succeeded at last by keeping to the steep slope of screes on the rt. bank of the stream. Below the precipices the Raspillythal is of no particular interest.'—[F. J. H.]

Allowing for the time lost by Mr. Hort's party, from 5½ to 6 hrs. seem to be required to reach Sierre from the col between the Glacier of Lämmeren and that of La Plaine Morte. A traveller attempting the pass from the Engstligenthal should either sleep at the highest châlets, or start from Adelboden some time before daylight, as it would be prudent to allow for some loss of time in seeking for the track.

Route F.

THUN TO SION, OR SIERRE, BY THE RAWYL PASS.

There are several routes from Thun to An der Lenk at the N. base of the Rawyl Pass. and on the S. side there are two paths leading to Sion, and a third by which the traveller may reach Sierre. In any case two days must be allowed for the journey between Thun and the valley of the Rhone.

1. *By Zweisimmen.* To An der Lenk, 11½ leagues by char-road. Thence to Sion, 11 hrs. by bridle-path, 10½ hrs. by foot-path; to Sierre, 11½ hrs. by foot-path.

The way from Thun to *Zweisimmen* is described in § 22, Rte. G. Here the *Ober Simmenthal*, bearing down the drainage of the glaciers of the Wildstrubel and the Wildhorn, joins the lesser branch of that stream and the road from Saanen. The way to An der Lenk lies through the main valley, a distance of rather less than 3 hrs.' walk, by a good char-road. This crosses the Simme opposite Zweisimmen, passes the Castle of Blankenburg and the hamlet of *Matten*, and in 3 m. more reaches *An der Lenk* (Inns: Sterne; Krone; both very fair; Bär—also at the Baths, outside the village, better quarters than at the inns), beautifully situated, 3,527 ft. above the sea, near the head of the Simmenthal, at the NW. base of a mass of snowy mountains, whose highest summit is the Wildstrubel (10,715′). This place affords excellent head-quarters for a mountaineer, being well situated for several interesting excursions, several of which are described by Mr. Hinchliff in the first series of 'Peaks, Passes, and Glaciers.'

A short way S. of the village is the junction of the two principal sources of the Simme. That descending from the Rawyl Pass, due S. of An der Lenk, flows through a branch of the valley called *Iffigenthal*, while the other shorter stream flows from the glaciers of the Wildstrubel SE. of the village. The two streams are divided by the green slopes of the Laubhorn, a promontory extending N. from the group of peaks whose highest summits are the *Laufbodenhorn* (8,901′), the *Gletscherhorn* (9,629′), and the *Weisshorn* (9,882′). The excursion most frequently made from An der Lenk is through the SE. branch of the valley. Ladies may go most of the way in a char. A pleasant walk of 1½ hr., passing the hamlet of Oberried, and near to some pretty falls of the Simme, suffices to reach the end of the glen, at the base of the *Amertenhorn* (8,727′), a massive buttress projecting on the NW. side of the Wildstrubel. To the rt., at a great height, sustained by a range of very steep rocks, is seen the *Räzli Glacier*, which descends from the snowfields lying between the Gletscherhorn and the Wildstrubel. A slight ascent leads to some châlets, above which, at the very base of the rocks, several copious springs break out from the rock. Though more than seven in number

these are called *Sieben Brunnen*. The water, which must have traversed interior fissures in the limestone, is partly derived from the melting of the Räzli Glacier, and partly from a small lake, called Fluh-See, near its base, lying above the barrier of rock. Though apparently difficult, there is a path known to the shepherds for ascending the very steep rocks below the Fluh-See; by this way the ascent of the Wildstrubel may probably be accomplished in less time than by the *Amerten Glacier*. The last-named glacier lies on the E. side of the Amertenhorn, and may be reached from Oberried, bearing due E. along the base of the precipitous N. face of the mountain. (See Rte. H.)

[The ascent of the *Wildhorn* (10,722′), the highest point in the range of the Bernese Alps W. of the Gemmi, is most easily made from An der Lenk. The best plan is to pass the night at the châlets of Stieren-Iffigen, near the head of the Iffigenthal, 4 hrs. from An der Lenk. The peak of the Wildhorn, which is steeply cut away on its S. and W. sides, has a long, gradually sloping ridge extending towards the N. The W. slope of this ridge sends its snows to contribute to the *Gelten Glacier*, while on the E. side lies the *Dungel Glacier*. The two glaciers meet in a slight depression in the ridge, N. of which it rises again to form the Hahnenschritthorn. Whether the Wildhorn be approached from Lauenen or from An der Lenk, the most convenient course is to gain the above-mentioned depression or col. The ascent from Lauenen (§ 22, Rte. E) is steep and rather difficult, that from the head of the Iffigenthal is much easier. The last part, up a rather steep snow-slope, may require a little step-cutting when the snow is frozen hard. From the col the ascent along the ridge leading to the summit seems to be quite free from difficulty. M. G. Studer considers the view of the Pennine Alps from this peak to be the finest and most complete attainable from any point on the N. side of that great range. From 3 to 4 hrs. should suffice to reach the top from the highest Iffigen châlets.]

The chief passes leading to and from An der Lenk are described in the two following Rtes. In crossing the Rawyl Pass it is advisable even for practised mountaineers to take a guide. The way is little traversed, and the track of former travellers over the plateau at the summit is readily effaced, so that a stranger, especially in cloudy weather, might very readily miss his way and be entangled in serious difficulties.

The char-road through the Iffigenthal is carried for about 3 m. above An der Lenk; the way lies at some height above the torrent, through very beautiful scenery. *Cistopteris montana* is here unusually abundant. 'The solitary traveller should beware of losing time by crossing a tempting bridge about half-way to Iffigen, a little below a very picturesque waterfall.'—[M.]

After more than 1½ hr. walk the hamlet of *Iffigen*, with a small inn. is reached. The valley bends to the W., and the mountain on the S. rises so steeply that a stranger would never suppose it to be traversed by a safe path for men and beasts of burden. The way lies by zigzags, and then along ledges of very steep rock. In two places rivulets fall in spray across the path, and in wet weather those who pass receive an involuntary shower-bath. The track on this side has been so far improved that there is no risk in riding animals well used to mountain work, but ladies descending this way would do wisely to cross the more difficult part on foot. About 2½ hrs. are necessary to reach the cross which marks the limits of the Cantons Berne and Valais. The *Rawyl Pass*, 7,943 ft. in height, is formed by a nearly level plateau. more than 2 m. in breadth, cut into hillocks and gullies by the working of the elements on friable slate rocks. Patches of snow and small pools of water, with one larger basin forming a little lake, vary

the dreary surface, which is all but utterly bare of vegetation. The Weisshorn to the NE., and the Mittaghorn on the W., do not rise boldly enough to relieve the monotony of the scene, and the traveller calls to mind the descriptions of some wild Lapland wastes, rather than the ordinary characteristics of an Alpine pass. Keeping well to W. of S. across the plateau, the traveller gains its southern verge, and suddenly enjoys a fine view of the Pennine Alps on the S. side of the Rhone valley. A moderately steep and rough path leads down the slope, at the base of which two considerable torrents burst forth from the face of the mountain. In about 6½ hrs.' steady walking, exclusive of halts, from An der Lenk, the châlets of Rawin (Fr. *Les Ravins*) are reached; here milk and fresh butter may usually be obtained.

From this point, at the head of the valley of the *Rière* torrent, three ways are offered to the traveller's choice. The mule-track to Sion keeps to the rt., and makes rather a considerable ascent, followed by a descent into a glen enclosed between rocks and pines. Thenceforward the path is carried along the slope of the mountain on the rt. bank of the valley, till a sharp turn round a rocky point opens out a view of the valley of the Rhone, and then descends, chiefly through forest, to the hamlet of *Ayent*, where the *curé* gives strangers lodging or refreshment. Here Mr. Hinchliff found a competent guide for the pass in the person of a drummer, or *tambour-major*. Guides are not easily found at Sion or Sierre. Fine views over the Valais lighten the way, and in 2 hrs. from Ayent, or 4½ hrs. from the châlets, the traveller reaches Sion. When travelling in the opposite direction, 5 hrs. at least should be allowed, irrespective of a halt at Ayent, which is usually given to the mules. The ascent being very hot in summer, a pedestrian cannot start too early from Sion.

There is a short cut in the descent of the valley from the châlets of Rawin, which avoids the ascent on the rt. bank of the torrent, and saves above ½ hr., but unless the traveller has learned from experience that he can place perfect confidence in the steadiness of his head, he ought not to attempt the passage. The people of the Valais, being exposed to suffer from want of water on the hot slopes that overlook the valley of the Rhone, are distinguished for the industry and enterprise which they exhibit in leading streams of water from the higher mountains to irrigate their fields and meadows. Besides ordinary channels for running water, often carried for many miles along the slopes of the mountains, they convey the fluid in troughs formed of hollowed pine trunks over obstacles otherwise impassable. It is not uncommon to see these troughs carried along the face of a precipice, attached to the rock by wooden pegs fixed in crevices. These channels and troughs —called *Wasserleiter*—are characteristic of the Valais, and are seen in every part of the Canton. The water obtained at the head of the glen of the Rière, and destined to irrigate the slopes about Ayent, is carried through the deep and narrow ravine below the châlets in the manner above described by troughs fastened to the precipitous rocks that overhang the torrent. Finding that the same course would much shorten the way between the châlets and the lower part of the valley, advantage was taken of the work to carry a very narrow path by the side of the water-troughs. In one place the rock actually overhangs, and it is necessary to stoop in order to avoid striking the head against it, while in others the way lies over loose planks, through the chinks of which the dark torrent is seen at a great depth below. Though seemingly rickety, no instance of any fatal accident from the passage of this path has been recorded.

The way from the Rawin châlets to Sierre lies by the l. bank of the Rière, on the opposite side to both the tracks leading to Sion. It is fatiguing from

the number of ravines which must be crossed, each involving a considerable descent, followed by a corresponding ascent; and the walk from An der Lenk to Sierre is longer than is desirable, except for pedestrians in thorough training. At Lens the traveller gains a fine view of the Rhone valley. A little farther on is Chermignon, and in the descent to Sierre the botanist will be pleased to find *Genista radiata*, and other southern species, announcing a marked difference between the climate of the Valais and that of the Canton Berne.

2. *By the Diemtigen Thal and Grimmi Pass.* 3 leagues to Latterbach by carriage-road; 9½ hrs. thence to An der Lenk. This is an alternative route for pedestrians going from Thun to An der Lenk, or to Zweisimmen. To reach the former place conveniently in the day it would be advisable to take the diligence or a char to Latterbach, on the high-road of the Simmenthal, 9 m. from Thun. On the opposite side of the Simme is the opening of the Diemtigen Thal. After crossing, first, the Simme, and then the Chirel, which drains the latter valley, a path mounts to the village of *Diemtigen*, where there is a country inn. The pastoral valley which takes its name from this village lies between mountains about 7,000 ft. in height. It has many branches, through which lie passes of no difficulty leading in various directions. The highest neighbouring summit is the Männlifluh (8,734′), lying between the two main branches of the valley which unite about ½ hr. above Diemtigen. At *Narrenbach*, 2¾ hrs. from Latterbach, a path leads SW. across the mountains in 5 hrs. to Zweisimmen, serving to vary the route between that place and Thun for those who have already seen the Simmenthal. The way to An der Lenk lies up the main branch of the valley to *Thiermatten*, 4 hrs. from Latterbach, where there is an inn. A number of short glens descend towards the head of the valley. The way lies by that lying due S., and following that direction the traveller will, in 2½ hrs. from Thiermatten, reach the summit of the *Grimmi Pass* (6,234′), commanding a pleasing view of the Fermelthal, a pastoral glen which descends to the Obersimmenthal, on the W. side of the *Albristhorn* (9,078′). Two hours suffice to reach *Matten* from the top of the pass, and 1 hr. more will take the traveller to An der Lenk.

3. *By Adelboden.* 7¾ leagues by char-road to Adelboden; 4 hrs. by mule-track thence to An der Lenk.

The way from Thun to Adelboden is described in Rte. A; for that from Adelboden to An der Lenk, see next Rte.

Route G.

KANDERSTEG TO LAUENEN, BY ADELBODEN AND AN DER LENK.

Kandersteg to Adelboden, 5½ or 6 hrs. on foot; thence to Lauenen, 8½ hrs. by mule-path.

Combined with the way from the Val des Ormonds to Lauenen, described in § 22, Rte. F, this offers to a pedestrian wishing to keep to the higher valleys during hot weather a route by which he may reach Kandersteg from the Val des Ormonds in two days' rather hard walking. But it would be better to give several days to the expedition, so as to enjoy the fine scenery of the neighbourhood of An der Lenk and Adelboden. A local guide is wanted between Kandersteg and Adelboden. A still more interesting way for the mountaineer by Schwarenbach, practicable in a long day from Kandersteg, is found in the next Rte.

About 1 m. above Kandersteg the path to Adelboden by the Bonder Grat turns off to the rt. from the Gemmi road; after ascending for more than an hour the path reaches some chalets, above which is a range of precipitous rocks, the steepest part of which is sealed by the help of a long ladder. Above the rocks the ascent

continues rather steeply, till in about 3 hrs. the ridge of the *Bonder Grat* is attained. It commands a very fine view of the Oberland peaks. On the W. side of the pass, after traversing an extensive rocky hollow, the traveller overlooks the Engstligenthal, and descends by slopes of débris to the highest châlets. The way is thenceforward easy, bearing somewhat to the l., and traversing several patches of pine-forest. The Engstligenthal is reached nearly a mile below Adelboden (Rte. E). [There is a longer but easier way by a pass some miles N. of the Bonder Grat.]

The way from Adelboden to An der Lenk by the *Hahnenmoos* is easy and agreeable. The mule-track is well marked, and passes by several groups of châlets. One of these is close to the summit of the pass, 6,404 ft. in height. An der Lenk (Rte. F) is reached in 3½ hrs. from Adelboden. A longer but more interesting way, which takes the traveller by the base of the Amertenhorn and the *Sieben Brunnen* (see last Rte.), turns aside from the direct path at a hamlet called Geilsbach, and follows a lateral glen to SW. Crossing the ridge N. of the Amerten Grat by a depression, 6,660 ft. in height, the track descends to the Amerten châlets, not far from the Sieben Brunnen. From 5 to 6 hrs. are necessary to reach An der Lenk by this route.

The way from An der Lenk to Lauenen, over the Trüttlisberg, is by a short lateral glen opening W. of the village. The best track — passable for laden mules—mounts on the N. side of the glen, and in 2½ hrs. reaches a plateau where stands a group of châlets, called Ober-Staffel. Nearly another hr. is required to reach the *Trüttlisberg Pass* (6,235′). The descent on the W. side is rapid and rather steep, and 1½ hr. suffices to reach

Lauenen (§ 22, Rte. E). Though not rising to grandeur, the scenery of the Trüttlisberg is very pleasing, and fine views of the neighbouring Alps are gained from many points in the way. If bound for Gsteig, the traveller may save a few minutes by traversing the valley of Lauenen from the base of the Trüttlisberg to the path leading to the Chrinnen Pass (§ 22, Rte. F), without entering the village.

Route H.

BATHS OF LEUK TO AN DER LENK— ASCENT OF THE WILDSTRUBEL.

10 to 11 hrs. from the Baths ; 2 hrs. less from Schwarenbach.

The first edition of this work contained an account of the way from Schwarenbach to An der Lenk, by the Lämmeren Glacier, first described by Mr. T. W. Hinchliff. Another rather shorter way is given in the ‘Alpine Journal,’ vol. ii., where, by a mistake, the time is under-estimated by 1 hr.

The old track leading to the Gemmi Pass lay on the W. side of the Dauben See. This is followed for some distance, and then, bearing to the W., the traveller gains a view of the Lämmeren Glacier. Following a sheep-track along the slope of the mountain, at a considerable height above the glacier, its N. bank may be reached in 2 hrs. from Schwarenbach at a point some distance above the lower and more crevassed portions of the ice-stream. After threading the way along the middle, through crevasses on either side, the traveller reaches the upper plateau of the *Lämmeren Glacier*.

There is some confusion about the topography of the tract of mountain and glacier lying between the Gemmi and Rawyl Passes. The mountain range may be compared to a great rampart, showing very steep, almost vertical, faces on the N. side towards the Engstligenthal and the head of the Simmenthal, and on the S. towards

the valleys that descend to the Rhone. The whole summit of this rampart is coated over with glacier and snow-fields, sloping away to the E. and S. from the summit of the Wildstrubel. According to the maps, five separate glaciers radiate from this peak. Of these, the Amerten and Räzli Glaciers, on the N. and NW. side, descend in steep ice-falls towards the Simmenthal. The *Glacier de la Plaine Morte*, on the S. side of the peak, has its outlet towards the Raspillythal, which joins the Rhone valley near Sierre. Lastly, the *Lämmeren Glacier*, much the largest of all, descends directly from the summit of the Wildstrubel nearly to the Dauben See. Between the two last, on the SE. side of the mountain, the maps exhibit a fifth—the *Wildstrubel Glacier*—of dimensions not inferior to either of them. The writer is disposed to believe this an error, and to suspect that all the névé formed on the E. and S. flanks of the Wildstrubel is ultimately borne either to the Glacier of Lämmeren, or to that of La Plaine Morte.

From the upper plateau of the Lämmeren Glacier, the highest peak of the Wildstrubel is seen rising by a gentle slope of névé. To the N., between that mountain and the Steghorn (?) is the Strubeleck (Rte. E), by which the hunters of the Engstligenthal gain access to the glacier; and on the l. lies the depression by which it is easy to pass to the Glacier de la Plaine Morte, and so descend to the valley of the Rhone.

From the plateau the ascent is easy, avoiding a few large crevasses, and in little more than 4 hrs. from Schwarenbach the traveller may attain the highest point of the *Wildstrubel* (10,715′). In addition to a noble Alpine panorama, including all the highest peaks of the Pennine and Bernese Alps, except the Jungfrau which is hid by the Altels, the view has the especial advantage of plunging down directly into the head of the Simmenthal, so that the houses in the village of An der Lenk are easily distinguished. The easiest line of descent to An der Lenk is to pass along the snow-ridge to the second peak, only 62 ft. lower than the first, and then follow the W. slope of the mountain, down to the verge of the Räzli Glacier. Bearing round to the rt., a wild stony hollow between the Wildstrubel and the Amertenhorn is soon reached. There seems to be no difficulty in descending thence to the lower part of the Amerten Glacier, whence a foot-track is soon found that leads to Oberried and An der Lenk. Under favourable circumstances $8\frac{1}{2}$ hrs. from Schwarenbach, exclusive of halts, would suffice for this interesting expedition.

Another way from Schwarenbach or Leukerbad to An der Lenk is to mount from the N. end of the Dauben See to a depression in the ridge S. of the Felsenhorn, near a projecting tooth of rock, and thence descend to the *Rothe Kumm Glacier*. Crossing this, and bearing to l., a second pass is effected at a point just on the S. side of a massive projecting block of yellow limestone, reached in 2 hrs. from the Dauben See. The traveller now looks down on a wild hollow, forming the uppermost end of the Engstligenthal, just under the Wildstrubel. This is crossed, and in $2\frac{1}{2}$ hrs. more a third ascent leads to the summit of the ridge that encloses the Amerten Gl. on the E. side. A long but not difficult descent by steep slopes of turf and shattered shale now follows, and the path to An der Lenk is joined about $\frac{1}{4}$ hr. below the Sieben Brunnen. By this way that village is reached in 3 hrs. from the ridge, or $7\frac{1}{2}$ hrs.' actual walking from the Dauben See. [There is a pleasant and short way—scarcely 5 hrs.—from Schwarenbach to Adelboden, by a faintly traced path that crosses the ridge N. of the Felsenhorn, and descends into the head of the *Ueschinenthal* near the foot of the Rothe Kumm Gl. It then mounts the opposite slope to the ridge N. of the Thierhorn, and descends on the other side close to the fall of the Engstligenbach.

SECTION 24.

BERNESE OBERLAND.

In describing the chain of the Pennine Alps it was observed that the region where, taking into account the extent, height, and number of the mountain ridges, the disturbing forces seem to have acted with most intensity, is that which has Monte Rosa for its centre. It was further remarked, that in the same district the general direction of the ridges and principal valleys which predominates throughout the Pennine chain—that from WSW. to ENE.—has been interfered with by forces that have impressed a N. and S. direction on the main ridges of the Monte Rosa group. It is somewhat remarkable that the Bernese Alps running parallel to the Pennine chain should have their maximum elevation and extent in the part of the range nearly due N. of the Monte Rosa, and that we should here find, though in a less marked degree, the evidence of forces that have upraised some of the highest ridges in a direction transverse to that of the axis of the chain. This is especially seen in the ridges enclosing the several branches of the Aar Glacier, which run from WNW. to ESE.

The most remarkable characteristic, however, in the orography of the central group of the Bernese Alps is, that whereas the W. portion of that chain, described in the last two sections, consists of a single series of summits with comparatively short projecting buttresses, the higher group presents a series of longitudinal ridges parallel to the axis of the main chain, and separated from each other by deep valleys that form the channels of great glaciers. Thus the Tschingel Glacier and the Gasterenthal, separate the portion of the main range lying between the Gemmi and the Mittaghorn from the equally high parallel range of the Doldenhorn and Blümlis Alp on its N. side. To the S. the same portion of the main range is divided from the still higher parallel range whose summits are the Aletschhorn and the Bietschhorn by the Lötschenthal and Lötschen Glacier. To this again succeeds the deep trench through which the lower part of the Aletsch Glacier flows down to the Rhone, enclosed by the minor ridge that culminates in the Aeggischhorn.

The grandeur and beauty of the scenery of this district, which is best known as the Bernese Oberland, have long obtained for it a just celebrity; and since strangers first began to visit the Alps, the names of Grindelwald, Lauterbrunnen, and Interlaken have been famous. It was long, however, before the interior portion of the range, and the great glaciers that flow down towards the Rhone on its southern flanks, were known and appreciated by strangers. Unlike the inhabitants of the French and Piedmontese Alps, the Swiss do not mainly owe to foreigners the knowledge of the grandest scenery of their native land. The first, in this century, to lead the way in the exploration of the Oberland were the brothers Meyer of Aarau. They were followed by Hugi, who displayed great enterprise and perseverance at a time when a mountaineer had to contend against ignorance and prejudice as well as the inherent difficulties of his pursuit. In 1841 M. Agassiz, with several scientific friends, established a temporary dwelling on the Aar Glacier, and, along with scientific observations on the glaciers, commenced a series of expeditions, continued at intervals by himself and his companions, which are recounted in two volumes published by M. Desor, entitled, 'Excursions et Séjours dans les Glaciers,' and 'Nouvelles Excursions,' &c. Much additional information regarding the Oberland Alps is contained in M. Gottlieb Studer's volume, entitled, 'Topographische Mittheilungen aus dem Alpengebirge.' Notwithstanding the activity of their predecessors, the members of the English Alpine Club have found scope for further exploits, amongst which may be reckoned the first ascents of the

THE
OBERLAND
DISTRICT.
English Miles
1 2 3 4
N
W E
S
Thuner See
Brienzer See
Grande Glacier
Greater Aletsch Glacier
Upper Grindelwald Glacier
Lower Grindelwald Glacier
Unter Aar Glacier
Ober Aar Glacier
Viesch Glacier
Rhone Glacier
Rhone Valley
Hasli Valley
Lauterbrunnen Valley
Simmenthal
Kienthal
Lötschen Pass
Gemmi Pass
Grimsel Pass
Brünig Pass
Scheidegg
Wengern Alp
Eiger
MÖNCH
JUNGFRAU
FINSTERAARHORN
Almerhorn
Jungberg
Gletscherhorn
Gr. Grünhorn
Grünhorn Lücke
Rothhorn
Faulberg
Wallliser Viescherhorner
Mittaghorn
Ahnen Grat
Tschingelhorn
Breithorn
Cross Horn
Döldenhorn
Fiststock
Blumlisalp
Gspaltenhorn
Wilde Gran
Tschingel Gl.
Breithorn Gl.
Kander Gl.
Lötschenlücke
Aletschhorn
Jungfrau
Schienhorn
Ollmenhorn
Rothhorn
Thorberg
Beichfirn
Aeggischhorn
Grünenhorn
Grosshorn
Unterbachhorn
Tschuggen
Sulegg
Morgenberg
Reichenbach
Mühlinen
Aeschi
Leissigen
Gsteig
Ringgenberg
Beatenberg
Unterseen
Interlaken
Neuhaus
Spiez
Faulensee
Merlingen
Wiler
Matten
Boningen
Ebligen
Hilterfingen
Oberhofen
Sundlauenen
Leissigenbad
Darlingen
Krattigen
Aeschiried
Frutigen Th.
Kien Th.
Lauterbrunnen
Mürren
Wengen
Grindelwald
Zweilütschinen
Gündlischwand
Schwarzwald
Schwarzhorn
Tschuggen
Lobhorn
Weisspitz
Wetterhorn
Schwalmern
Hohkien
Gr. Hundshorn
Schilthorn
Gimmelwald
Bonigen Alp
Stechelberg
Trachsellauenen
Trachsellaui
Trachsellauithal
Lauterbrunnen
Mettenberg
Grütschalp
Isenfluh
Saxeten
Gsteigwiler
Hinterburg
Burglauenen
Brienz
Iseltwald
Schwanau
Giessbach
Giessbach Fall
Axalp
Brienzer Rothhorn
Brienzer Grat
Augstmatthorn
Rothhorn
Hohgant
Schwarzhorn
Wildgerst
Tschingelfeld
Hexen
Ehrlischwend
Senggi
Mandlen
Bumbach
Bumbachfall
Bumbachthal
Bumbachgl.
Faulhorn
Silberlicke
Blau Gl.
Hinterburg
Burg Alp
Gandlischwand
Buhl
Burglauenen
Grund
Grindelwald
Bussalp
Mettenberg
Wellhorn
Gr. Scheidegg
Rosenlaui Glacier
Wetterhorn
Mittelhorn
Renfenhorn
Hängendhorn
Rosenhorn
Berglistock
Gauli Glacier
Renten Gl.
Steinhorn
Engelhorn
Dosselhorn
Schwarz Alp
Gelaui Stock
Rutzlihorn
Lt. Schreckh
Gr. Schreckhorn
Schneehorn
Hühnerhalist
Aelpli Gl.
Handeck
Handeck Fall
Triftens
Gerstenh.
Bächli Gl.
Brouli
Grimsel H.
Grimsel
Unterwasser
Wirthshaus
Zäsenberg
Eismeer Gl.
Mittellegi Gl.
Lauteraar Gl.
Schreckhorn
Strahleck
Abschwung
Viescher Gl.
Viescher Grat
Kl. Viescherhorn
Finsteraar Joch
Escherhorn
Grunerhorn
Zinken Stock
Studer Joch
Ober Aarhorn
Ober Aar Joch
Lauchernhorn
Gr. Siedelhorn
Rothhorn
Lötschenthal
Lötschenpass
Lötschen Th.
Lonza
Ferden
Kippel
Wyler
Blatten
Gletscherhorn
Breithorn Gl.
Tschingel Gl.
Kander Gl.
Lötschen Gl.
Aletsch Gl.
Jungfrau Gl.
Ober Aletsch Gl.
Unter Aletsch Gl.
Jägihorn
Jungfrau Joch
Sattelhorn
Distelberg
Hockenhorn
Tennbachhorn
Sackhorn
Birnhorn
Fusshorn
Bietschhorn
Bietsch Gl.
Bietsch Alp
Jägihorn
Breithorn
Grisinhorn
Bell Alp
Terrenthorn
Maing Gl.
Kastelhorn
Jole Gl.
Betten
Mörel
Grengiols
Bitsch
Aernen
Lax
Viesch
Mühlebach
Niederwald
Bellwald
Ried
Hoof
Steinhaus
Holzmatten
Holzmatten Th.
Holzmatten Gl.
Rappen Th.
Rappen Gl.
Schweifen Gl.
Blatt
Eginen
Binn Th.
Binn
Ritzingen
Biel
Selkingen
Blitzingen
Reckingen
Gluringen
Münster
Münster Th.
Münster Gl.
Gesehenen
Obergestelen
Uhrachen
Blasihorn
Holhlicht
Brodelhorn
Hohsand Glacier
Gries Glacier
Rhone Th.
Rhone Gl.
Gletsch
Furka
Furka Pass
Furka Th.
Furka Gl.
Muttenhorn
Galenstock
Tiefenmatten
Tiefenmatten Gl.
Tiefenmatten Th.
Tiefenmatten Horn
Tiefenmatten Joch
Tiefenmatten Alp
Tiefenmatten Th.
Tiefenmatten Gl

Aletschhorn and the Schreckhorn, and the still more arduous enterprise of crossing the range by passes, hereafter described, which must certainly be reckoned amongst the most formidable that have been effected in the Alps.

It might have appeared convenient to describe, in different sections, the portions of the Oberland group belonging to the Canton Berne, and those lying on the S. side of the water-shed in the Canton Valais. But here, as elsewhere, it is found that the main valleys form the natural divisions of a mountain country, and it seems best to include in the present section the entire region bounded on the S. by the Rhone, on the E. by the valley of Hasli and the Grimsel, and on the N. by the lakes of Thun and Brienz. To the W. the boundary, not so well defined, corresponds nearly with a line drawn from Gampel in the valley of the Rhone over the Lötschen Pass to the Blümlis Alp, and thence through the Kienthal to the Lake of Thun. It will be convenient to include also a slight notice of the minor ranges on the N. side of the lakes of Thun and Brienz.

There is no part of the Alps where arrangements for the accommodation of foreign visitors, and for extracting at the same time the utmost possible amount of coin from their pockets, are so completely organised as in this district, and especially in the valleys belonging to the Canton Berne. On the one hand it is of no little convenience to a stranger to find inns more or less comfortable at almost every spot where he can reasonably desire to pass the night, along with guides and abundant means of conveyance; but, on the other, it is not pleasant to find the entire population banded together with no other seeming object than to make a profit out of his passage. Along the frequented tracks of the Great Scheidegg and the Wengern Alp, the wayfarer is at every half-mile assailed by some new appeal to his pocket. Sometimes it is by a live chamois or marmot, sometimes by an echo to be awaked by a horn, or a chorus of discordant children's voices; anon it is by bits of pyrites or quartz, or by specimens of wood carving, that toll is levied on the stranger; but the most effectual and simplest device is to put a wooden gate across his track, and keep a ragged child in readiness to open the gate on his approach, and tender its palm for the reward. The best way to save wear and tear of temper and good humour, is to be provided with a moderate supply of small coin, and suppress all outbursts of virtuous indignation.

It is probably for the advantage of foreigners that the Cantonal authorities should have established the tariff for carriages, horses, &c., as well as regulations for the guides which are in force on the Bernese side of the range. In regard to the regulations in force in the Valais, the reader is referred to the Introduction to this Chapter. The principal items of the *Oberland Tariff* are here inserted for the convenience of travellers. There is one general provision not commonly adopted elsewhere which enables tourists to make part of an expedition in a carriage, and then to use the horse, or horses, for riding to some desired point.

In default of special rates fixed by tariff, the ordinary daily charge for a carriage with one horse is 13 fr.—with two horses, 25 fr. Carriages with one horse hired for a short drive, not specified in the tariff, cost

	fr.	cent.
For one league (Stund) and return	3	0
„ two leagues	4	50
„ three leagues	5	5
„ four leagues	6	0

and double the above rates for a carriage with two horses.

Interlaken to Lauterbrunnen and return, delaying not more than 3 hrs.—

Carriage with one horse	9 fr.
„ „ two horses	17 „

Same excursion, delaying more than 2 hrs., ordinary day's rate.

Interlaken to Grindelwald and return on same day—

Carriage with one horse	14 fr.
„ „ two horses	25 „

returning on the following day—

Carriage with one horse	25 fr.
,, ,, two horses	45 ,,

Interlaken to Zweilütschinen only—

Carriage with one horse	7 fr.
,, ,, two horses	12 ,,

Interlaken to Lauterbrunnen, thence to Grindelwald by road, and return same day—

Carriage with one horse	17 fr.
,, ,, two horses	30 ,,

Employing two days, the rates are 25 and 45 fr.

Interlaken to Lauterbrunnen, thence to Grindelwald by the Wengern Alp, using the same horses, and return to Interlaken on same day—

Carriage with one horse	20 fr.
,, ,, two horses	40 ,,

Employing two days—

Carriage with one horse	25 fr.
,, ,, two horses	55 ,,

In addition to the above rates, there is a charge of 5 fr. for the conveyance of a 1-horse carriage, and 10 fr. for a 2-horse carriage, from Lauterbrunnen to Grindelwald; but if the tour be made in the opposite direction, going from Grindelwald to Lauterbrunnen, the last-mentioned charges are reduced to 3 fr. and 6 fr. respectively.

Interlaken to Lauterbrunnen, thence to Mürren, or Trachsellauinen, using same horses for the ascent, and returning by Lauterbrunnen to Interlaken in two days—

Carriage with one horse	28 fr.
,, ,, two horses	55 ,,

Interlaken to Lauterbrunnen, Mürren, Wengern Alp, and Grindelwald, using same horses, and returning to Interlaken, if not engaged more than 3 days—

Carriage with one horse	35 fr.
,, ,, two horses	65 fr.

The ordinary rate per day is payable for any number of additional days, and extra charge, as above specified, for conveyance of the carriage between Lauterbrunnen and Grindelwald while the travellers cross the Wengern Alp.

Interlaken to Grindelwald and the Faulhorn, using same horses for the ascent, returning on second day—

Carriage with one horse	33 fr.
,, ,, two horses	60 ,,

Interlaken to Brienz and return, delaying not more than two hrs.—

Carriage with one horse	8 fr.
,, ,, two horses	15 ,,

Same excursion, delaying more than two hours—ordinary day's rate.

Interlaken to Meyringen, returning same day—

Carriage with one horse	16 fr.
,, ,, two horses	30 ,,

returning on the following day—two ordinary days are payable.

If the driver be discharged at night, and sent back empty—

Carriage with one horse	17 fr.
,, ,, two horses	30 ,,

Brienz to Meyringen, discharging the carriage at once—

Carriage with one horse	7 fr.
,, ,, two horses	13 ,,

returning with not more than 3 hrs. delay—

Carriage with one horse	8 fr.
,, ,, two horses	15 ,,

delaying more than three hrs.—ordinary day's rate.

Interlaken or Meyringen to the Rothhorn, using same horses for the ascent, and returning in two days—

Carriage with one horse	25 fr.
,, ,, two horses	50 ,,

Interlaken to Kandersteg—

Carriage with one horse	25 fr.
,, ,, two horses	45 ,,

Interlaken to Frutigen, or to Thun—

Carriage with one horse	18 fr.
,, ,, two horses	32 ,,

Interlaken to Wimmis—

Carriage with one horse	15 fr.
,, ,, two horses	25 ,,

Carriages taken from Neuhaus, Unterseen, or Boningen, are payable at the same rates as from Interlaken. In all

the above excursions the rates payable are the same when the direction is reversed.

The ordinary daily pay for a horse or mule with a man to accompany it is 11 fr.; or, if several animals be engaged for the same party, 10 fr. each. The following are the special rates fixed per horse and man:—

Grindelwald to Lauterbrunnen by the Wengern Alp, return included, or *vice versâ*	15fr.
Grindelwald to the Faulhorn and back on the same day	15fr.
Brienz to the Rothhorn and back on the same day	15 ,,
Meyringen to Rosenlaui, returning on the same day	10 ,,
,, returning on the following day	15 ,,
,, *to the Great Scheidegg* ,, ,,	15 ,,
,, *to the Faulhorn* ,, ,,	25 ,,
,, *to Grindelwald*, returning on the following day	20 ,,
,, *to the Faulhorn, descending thence to Grindelwald*	30 ,,
,, *to Lauterbrunnen*, employing not more than two days	30 ,,
,, *to Lauterbrunnen by the Faulhorn*, employing not more than three days	40 ,,
,, *to the Handeck* and return in one day	15 ,,
,, *to the Handeck* and return in two days	20 ,,
,, *to the Grimsel* and return in two days	25 ,,

Donkeys are kept for hire at Interlaken. The charge fixed is 1½ fr. for the first hour, and 1 fr. for each successive hour. Charge for the entire day, 6 fr.

The tariff is exhibited in the chief hotels, steamers, and other public places. It contains various regulations in regard to the drivers of hired carriages, the most important of which is that which fixes the maximum number of travellers to be carried in a one-horse carriage at three, while six are entitled to travel in a two-horse carriage. Drivers and the men who accompany horses are not entitled to anything extra, but travellers when satisfied with their conduct usually give a moderate *bonnemain*, or *trinkgeld*.

The regulations laid down for guides in the Oberland require that each professed guide should have a book containing an official certificate and warrant containing the guide's name and place of residence. The ordinary rate of pay is fixed at 6 fr. for a day's walk not exceeding 8 stunden, and 8 fr. for expeditions somewhat exceeding that limit. The payment for longer and more difficult expeditions is left to be settled by mutual agreement. Return fare either to the place of hiring or to the place of residence named in the guide's book, at the traveller's option, is payable at the rate of 6 fr. per day's journey of 8 stunden. It is usual to give a guide who has behaved well something over the prescribed rate, but he is prohibited from making any demand to that effect. The guide is bound to carry at least 15 lbs. of luggage if required. Porters, who in the Oberland will carry very heavy loads, do not require any special authority to ply their trade, but are liable to punishment in case of misconduct. An innkeeper or professed guide recommending a porter to a stranger becomes liable for his good conduct. The rate fixed is 6 fr. a day, and the same for return fare. While in most other districts four porters, and sometimes six, must be taken with a chaise-à-porteur, it is not uncommon in the Oberland for two men to offer to carry a lady of light weight for several days, claiming no more than the ordinary pay and return fare.

Besides the well-known head-quarters of tourists, the Grimsel Hospice, the inn on the Aeggischhorn, and that on the Bel Alp, are admirably situated as centres whence a mountaineer may enjoy in the fullest manner the grand scenery of the great glaciers, or apply himself to scientific research. Although the absolute height of the Oberland group be considerably less than that of the Mont Blanc range, or the great peaks of the Monte Rosa district, the glaciers are here on a greater scale. This has been partly explained by the form of the upper valleys of the Oberland Alps, which, on the E. and S. sides, have a more gradual slope than those of the Pennine Alps, and are connected with reservoirs of great dimensions. It is further probable that the absolute

quantity of snow falling annually at equal heights is greater here than in the Pennine range, and it is certain that the mean temperature is lower, and both these causes must contribute to increase the volume of the glaciers.

The mountaineer visiting the Oberland should not fail to supply himself with sheets 13 and 18 of the Swiss Federal Map.

Route A.

THUN TO INTERLAKEN AND MEYRINGEN, OR REICHENBACH.

There are three ways offered to the choice of travellers who enter the Oberland from Thun. The easiest, cheapest, and most frequented way is by the steamers on the lakes of Thun and Brienz; the carriage road runs along the S. shore of the former lake and the N. shore of the lake of Brienz; and the pedestrian may find comparatively unfrequented, though not uninteresting, paths on the opposite side of each lake.

1. *By the Lake Steamers.*

	Eng. miles
Neuhaus (by steamer) . .	11
Interlaken (by road) . . .	2½
Brienz (by steamer) . . .	9
Meyringen (by road) . . .	9
	31½

The steamers plying on the lake of Thun start from the town (§ 23, Rte. A), and take in passengers opposite to the Hôtel Bellevue. There are three departures daily in summer, and the passage occupies 1¼ hr. After mounting against the stream of the Aar for about 1 m. from Thun, the steamer enters the lake. Nothing can exceed the beauty of the scenery; and the only regret felt by a stranger is, that the rapid motion of the steamer should shorten his enjoyment of so exquisite a combination of the milder with the more sublime aspects of nature. On the S. side the peaks of the Stockhorn (§ 22, Rte. G), and the Niesen (§ 23, Rte. A), with the castles of Strättlingen and Spiez near the shore of the lake, are conspicuous objects. On the N. shore the traveller will remark the castle of Oberhofen and the St. Beatenberg (see below). In the background are the snowy peaks of the Oberland Alps. The Jungfrau remains constantly in view; and after passing the Nase, a rocky headland on the N. shore, the Eiger and Möneh are added to the picture.

Neuhaus is a village consisting mainly of third-rate inns and wine-shops, where passengers are landed from the steamers. Omnibuses (fare 1 fr. for each person) and numerous vehicles of all kinds are in readiness to convey passengers to Unterseen and Interlaken. Fare for 1-horse carriage, 2 fr.; for 2-horse carriage, 3 fr. The difference between the level of the lakes of Thun and Brienz being but 23 ft., there is reason to believe that they were originally continuous, and that the middle portion of the ancient lake-basin was filled up, and the alluvial plain between the present lakes formed from the mass of débris and sediment borne down by the Lütschine, aided by the Lombach on the N. side. The barrier thus formed would naturally raise somewhat the level of the upper lake. In the midst of the alluvial plain, which is cultivated like a garden and called Bödeli, on the rt. bank of the Aar, stands the ancient village of

Unterseen (Inns: Hôtel and Pension Beausite, good and cheap, civil people; H. du Pont [Zur Alten Post], old-fashioned, but good, clean, and cheap; H. Unterseen; H. Eiger; with several others). Persons who are not attracted by the more brilliant society of Interlaken, and who seek quiet and economy, resort hither; but the great majority of tourists prefer the newer and more fashionable place, and therefore cross the bridge over the Aar. The older houses near the river form the hamlet of Aarmühle, where two rather primitive inns (Inns: Bellevue; Weisses Kreuz) receive strangers. Here commences a noble avenue of walnut trees nearly a mile in length,

called the Höheweg, which forms the central portion of

Interlaken (Inns: H. de la Jungfrau, very well kept by F. Seiler, good and reasonable; H. Belvedere, good, perhaps the best fitted up, frequented by English and Russians; H. Victoria, good and reasonable; H. des Alpes, fine house but inferior position; H. d'Interlaken, much frequented by passing tourists; Beaurivage, new, handsome house; Schweizerhof, much frequented, kept open in winter; H. Fischer, with baths in the Aar; H. Ritschard, highly recommended, chiefly frequented by persons remaining *en pension*, many German families; H. du Casino; H. du Lac, at the farther end of the Höheweg, by the landing-place of the Brienz steamers). Strangers remaining more than a week are taken *en pension* at all the hotels. The size and number of the hotels above enumerated, nearly all of them in the Höheweg, prove the popularity of Interlaken as the favourite resort of tourists in Switzerland. But in addition to this incomplete list, there must be added a considerable number of inns and boarding-houses in the immediate neighbourhood. Of these the Felsenegg Châlet, kept by the head waiter of the H. de la Jungfrau, and commanding a beautiful view of the Lake of Brienz, has been particularly recommended. Towards the foot of the Rugen (see below) are several establishments, of which the Jungfraublick, the H. Wyder, and the H. Ober, have been well spoken of. At Böningen, on the Lake of Brienz, are the Hôtel Seiler, the Pension Vogel, and the Châlet du Lac.

The position of Interlaken is picturesque, though perhaps not superior to that of many other places in the Alps; the climate is mild and moderately sheltered from cold winds; it is extremely well situated for many beautiful excursions; but probably all these advantages would of themselves have done little to attract most of those who spend the summer season here. According to the traveller's humour and disposition, he will consider it an advantage or the reverse that this is the chosen resort of those strangers who desire to carry with them into the sanctuary of nature as much as possible of the habits of fashionable watering-place society. Incapable of deriving deep and continuous enjoyment from the sublime objects that surround them, a large portion of the visitors of the gentler sex find constant occupation in the display of city finery; while the less fortunate male idlers are too often reduced to a condition of utter vacuity, provoking painful comparisons between their condition and that of Dr. Guggenbühl's patients on the Abendberg. In spite of these disturbing elements, a stranger whose temper they do not ruffle may spend weeks and even months of true enjoyment amid the beautiful scenes that lie in the immediate neighbourhood of Interlaken. It lies too low and too far from the higher peaks to suit the ardent mountaineer, but it would be difficult to exhaust the list of longer or shorter excursions for which it serves as a convenient starting-point. Many of these are incidentally described in the following Rtes. Of those nearer to Interlaken the following may be specified.

The *Klein Rugen* is an almost isolated rock, the last and lowest of the range dividing the Saxetenthal from the Lake of Thun. The summit, commanding one of the finest views near to Interlaken, is reached in $\frac{3}{4}$ hr., passing the beautifully-situated Jungfraublick Pension. The return may be made by the picturesque castle of Unspunnen, and the road leading to Lauterbrunnen. Much higher up on the range terminating in the Rugen is the *Abendberg*, reached in 2 hrs., ascending from Unspunnen. A Dr. Guggenbühl, now deceased, opened here several years ago an institution for the cure of Cretinism. Very favourable reports were published, and large subscriptions were obtained from benevolent persons in various parts of Europe; but the results have been since called in ques-

tion, and serious charges advanced against the manager. Corresponding to the Rugen, but on the N. side of the Aar, is the *Hohbühl*, a hill overlooking the Lake of Thun, and rivalling the former in the beauty of its view. The walk may be lengthened by descending on the opposite side of the Hohbühl to the opening of the Habkerenthal, and returning by Neuhaus.

In the opposite direction from the above excursions a walk of ½ hr. from Interlaken leads to *Böningen*, finely situated on the L. of Brienz, on the S. side of the outflow of the Aar. On the opposite side, reached by the road leading to Brienz, is the *Golzwyler Hubel*, ¾ hr. from Interlaken, and ½ hr. farther, the *Ringgenberg*, both commanding noble views of the lake and the mountains enclosing it.

The ascent of the *Harder*—about 2½ hrs. to the summit—is an excursion often made from Interlaken, and deservedly so. There is a moderately good, and perfectly safe path, by the slopes on the N. side of the Aar, but it is easy to go astray. The upper part of the mountain is formed of steep slopes of slippery turf. Rashly venturing on these slopes, an English lady and two Swiss girls have lost their lives, and even practised mountaineers have felt themselves in danger when attempting to mount over the treacherous declivity.

Three interesting excursions may be made through the valley of Habkeren, drained by the *Lombach* torrent, which falls into the Lake of Thun by Neuhaus. There is a new char-road as far as the village of *Habkeren* (3,675′), 2 hrs. distant, which has a pretty good country inn. The valley is a narrow glen, enclosed between the Harder, said to be inaccessible on this side, and the *Güggistrat* (7,035′), overlooking the Justithal and the L. of Thun. The latter summit is reached without difficulty in 2½ hrs. from the village.

Rather longer and more laborious is the ascent of the *Hohgant* (7,216′). This may be taken in the way from Interlaken to the head of the Emmenthal (Rte. Q), or the traveller may go and return in one long day. The most direct, but roughest and steepest, way lies by the Traubach; a longer route, but more agreeable, is by the Bohlegg. The summit is a double peak with a deep cleft in the midst. In clear weather the view is said to extend as far as Mont Blanc. This excursion is interesting to the geologist. The Hohgant is in great part formed of that member of the cretaceous formation to which the Swiss geologists have given the name *Schrattenkalk*, from the local name given to the long tortuous channels which the rain scoops in the rock. In the *Habkerenthal* the flysch rocks contain fragments of a peculiar granite, which has not yet been found *in situ* anywhere in the Alps.

Another excursion to be made from the Habkerenthal is the ascent of the *Augstmattenhorn* (6,929′), a shattered summit overlooking the L. of Brienz, and commanding a noble view of the Oberland Alps, rising on the opposite side of the lake. The ascent is not easy, and requires the aid of a local guide. The path turns to the rt. from the road to Habkeren just before reaching the bridge that leads to the village.

A new road has been opened to the village of *Beatenberg* (Inns: H. des Alpes; H. Bellevue; noble views), overlooking the Lake of Thun. The Guggisgrat is more easily reached from this side than from Habkeren.

The ascent of the *Schienige Platte* (6,181′?) is a very interesting excursion, now often made by ladies. Horse-hire from Interlaken 15 fr. The name, *Gummihorn*, given to the summit visible from Interlaken, on the authority of Mr. A. Wills, in the first edition of this work, properly belongs to a very steep obelisk of rock, standing farther back, and less well situated for a view. Turning to the l. from the road to Lauterbrunnen at Gsteig, ½ hr. from Interlaken, the mule-path crosses the Lütschine, and ascends through a fine

beech forest. After an ascent of about 2,000 ft., a belt of pasture separates the beech from the higher zone of pine and larch forest. Then follows a grassy slope with a châlet visible from Interlaken. Here the path winds round the mountain towards the valley of the Lütschine, and in 3 hrs. from Gsteig reaches a plateau whereon stands a very fair mountain inn. From hence the summit may be reached on foot in ½ hr. The view is one of the finest in this neighbourhood. Its peculiar advantages arise from the position of the mountain in respect to the four main valleys that converge at Interlaken. Those occupied by the lakes of Thun and Brienz, as well as the valley of Lauterbrunnen, and that of Grindelwald, are seen throughout their entire length, while the view of the snowy peaks is little, if at all, inferior to that from the Faulhorn.

The ascent of the *Suleggi* is described in Rte. E.

Strangers restrained by bad weather from making excursions from Interlaken will find a tolerably well-supplied reading-room. The shops with articles in carved wood, many of which are really well executed, tempt most visitors. The Parquetterie-Fabrik of Arnold Halder, where excellent works in marquetry and inlaid woods are executed, deserves a visit. The owner is very well acquainted with the neighbouring Alps, and may be consulted with advantage by those planning any unusual expedition.

The guides of Interlaken are, with few exceptions, third-rate men, serving to show the way, but of no use in expeditions of any difficulty. For rules as to guides, and the tariff for carriages, horses, &c., see the introductory paragraphs to this §.

The Lake of Brienz which along with the L. of Thun forms the N. limit of the Oberland Alps, is about 9 m. in length, and 2 m. in breadth. The surface is 1,946 ft. above the sea, and its depth in some places is more than 2,000 ft., exceeding that of all the other lakes on the N. side of the Alps. Probably on that account its waters have never been known to freeze in the severest winters. The depth at the upper end must once have been much greater, as the Aar constantly pours its turbid waters laden with silt and sand into the head of the lake, and issues forth in a pure stream at the opposite end. The steamer starts from the Zollhaus on the Aar at Interlaken, some distance below the point where the river issues from the lake. It plies to and from Brienz three times daily in summer, employing an hour in the passage, and calling at the Giessbach and at Kienholz.

Though less varied and striking than that of the L. of Thun, the scenery is fine. The great resort of strangers visiting the lake is to the *Giessbach*, a waterfall which owes its celebrity more to the extreme beauty of its position than to the volume or height of the fall. It lies near the E. end, but on the S. shore of the lake; and most passengers leave the steamboat, or else hire a boat at Brienz, to take them to the fall. Fare, either way, 3 fr. About ½ m. from the landing-place is a large and handsome hotel, said to be very well conducted—pension from 6 to 10 fr. a-day, according to the rooms occupied—and a little higher up, close to the fall, is a spacious dining-room, intended not only for persons remaining at the hotel, but for passing visitors, who may sometimes be counted by hundreds in a fine summer's day. From this building the fall may be seen to perfection in wet weather, when the torrent is swollen to the utmost. Part of the inducement to strangers to stop at the Giessbach Hotel is the practice of lighting up the fall at night with Bengal lights or other fireworks. The effect is very beautiful. The Giessbach is properly the name of the torrent which drains the steep N. side of the Schwarzhorn (Rte. B). No less than fourteen cascades are counted, which have been fancifully named after as many of the men famous in Swiss

history. The lower seven cascades are those which are commonly visited; and it is to the admirable manner in which they are grouped that the beauty of the fall is chiefly due. Strangers are recommended to pass behind one of the falls (the 6th ?), which leaves a clear space between the water and the rock, made accessible, as are all the falls, by a good path. A waterproof cape is advisable for this passage. The manager of the hotel is a botanist, and will direct the stranger to habitats for the scarcer species. Amongst these is *Malaxis monophyllos*. A steep track, not to be attempted without a guide, leads, in 5½ hrs., from the Giessbach to the summit of the Faulhorn (Rte. B).

Kienholz (Inn: Bellevue) stands at the E. end of the lake, on the way from Brienz to Meyringen, so that passengers bound for the latter place save some distance by landing here. The village has been twice destroyed by landslips from the adjoining mountain, and the Bernese Government offered to build houses for the inhabitants in a securer site; but they have refused to move from their homes, though repeatedly threatened with a renewal of the calamity.

Brienz (Inns: Bär, good, with first-rate prices, rather noisy, being close to the landing-place of the steamers; Weisses Kreuz, half a mile from the landing-place, attendance better, and prices lower) stands at the NE. corner of the lake, at the foot of the *Brienzergrat*. This is the head-quarters of the Swiss carved-wood trade, which is here carried on in several large establishments: one of them is engaged in supplying a shop on the Boulevard des Italiens in Paris. Though not so much frequented as many other places in the Oberland, this has been the favourite resort of artists, who often lodge at a pavilion on the Fluhberg (belonging to the landlord of the Weisses Kreuz), which commands a fine view of the lake. A more extensive prospect is gained from the *Planalp*, 1¾ hr. above the town. For those who do not care to ascend a height, the finest point of view is from the old church, standing on a rock at the W. end of the town, close to the ruins of a castle.

After the Giessbach, which is the indispensable excursion, that most frequently made from hence is the ascent of the *Brienzer Rothhorn* (7,917′), so called to distinguish it from the many other mountains of the same name. From 4½ to 5 hrs., exclusive of halts, are required to reach the summit on foot or on horseback. (See tariff.) A guide (required only by novices) is paid 5 fr. A new clean inn, standing about ¼ hr. below the summit of the mountain, replaces the old house, which was burned down by accident. The panorama is amongst the finest in the Alps, being intermediate in many respects between those of the Rigi and the Faulhorn. The Oberland peaks are seen in the same direction as from the Faulhorn, though not so near at hand; but the circuit here includes the Titlis, and the higher summits of the Uri and Glarus Alps, and an extraordinary number of lakes, even the L. of Constance being seen in the northern horizon. A pedestrian intending to visit the Rothhorn, will do well to take it, when practicable, in his way from Sarnen (§ 25, Rte. A) to Brienz. The views throughout the expedition present themselves more favourably than in the ascent from Brienz, and the traveller avoids a somewhat laborious and hot ascent by the S. slopes of the mountain, instead of which he has the pleasure of descending, with beautiful pictures of the lake and the Alps constantly before his eyes.

There is a good road from Brienz to Meyringen and to Reichenbach, each about 9 m. distant. After passing Kienholz (see above), the road turns away from the lake, and traverses a low tract, part of the ancient lake-basin filled up by the Aar, and liable to frequent inundation. The road is carried for 2 m. along the rt. bank of the river, and the valley of Hasli opens out

before the traveller between the range of the Brünig on the N., and the higher and steeper range on the S. side, down which two torrents fall in a succession of cascades. The road to Lucerne over the Brünig branches off to the l., and that to Meyringen crosses to the l. bank of the Aar, here embanked between massive dykes of rough masonry. After passing the cascade of the Wandelbach, the road recrosses the river (leaving on the l. bank the short branch road to Reichenbach), and soon reaches

Meyringen (Krone or Couronne; Wilde Mann or Sauvage; about equally good, very fair country inns; Bär; Landhaus; both second-rate), a large village (2,224′), the chief place in the *Haslithal*, whose far-famed beauties are to be sought mainly in the upper valley above the Kirchet, as the lower valley is defaced by the broad flat marshy tract lying between the village and the lake of Brienz. Here dwells in winter Melchior Anderegg, the famous guide; and Caspar Blatter, a young but excellent man. Johann Tännler of Wyler, his namesake of Hausen, A. Jaun, Jacob and Melchior Blatter, are well recommended. B. Naegeli of Guttanen is also a steady guide, but his namesake of Meyringen has been ruined by drinking. Most travellers prefer to Meyringen the Hôtel *Reichenbach*, standing below the water-fall of that name, on the opposite bank of the Aar. It is reached by road from Brienz in the same time as Meyringen, and is rather more convenient for travellers starting for the Grimsel or for Rosenlaui. The accommodation is superior to that in the village, when the house is not overfull, and the prices somewhat higher. There is an adjoining building—Pension des Alpes—kept by the same proprietor, intended for persons who remain for some time. A post carriage runs twice a day between Meyringen and Brienz, in connection with the steamer on the lake. The expeditions most commonly made from hence are described in the two following Rtes.

2. *Thun to Brienz by Carriage Road.*

16½ m. to Interlaken—10 m. thence to Brienz.

Though the scenery of the shores of the L. of Thun cannot be otherwise than beautiful, the way by the S. shore, traversed by the high-road to Interlaken, is on the whole less interesting than either of the other ways here described. Leaving Thun by the same road which leads to Frutigen (§ 23, Rte. A), soon after passing the bridge over the Kander the road to Interlaken keeps to the l., but not close to the shore. On the left hand, close to the lake, is seen the village and castle of *Spiez*. The latter is interesting from its associations with early Swiss history. Founded, as some say, by the Romans, or, as others believe, by Attila, it was in succession the seat of the three historic families of Strättlingen, Bubenberg, and Erlach. Near *Leissingen*, a village with an adjoining establishment of mineral baths, in a charming situation, the road from Interlaken to Frutigen mounts the hill on the rt. Passing close under the base of the Abendberg, the road reaches the point where the Aar falls into the lake. The old road goes to Interlaken by the l. bank: a new road, rather shorter, passes by Unterseen, twice crossing the river; a foot-path, between the Klein and Gross Rugen, leads to Unspunnen, on the road from Interlaken to Lauterbrunnen, shortening the way to the latter place by at least 2 miles.

The carriage road from Interlaken to Brienz lies by the N. shore of the lake. A short distance beyond the end of the Höheweg is a roofed bridge over the Aar, and less than 1 m. farther, the Golzwyler Hubel, overlooking the L. of Brienz, often visited for the sake of the view. The ruined castle of Ringgenberg, about 1 m. farther, is a conspicuous object; close to it is the village (Inn: Bär) of the same name. The lower slopes of the Brienzergrat traversed by the road are covered with forest, and the drive

of about 10 m. from Interlaken is thoroughly enjoyable.

3. *Thun to Brienz by Foot-path.*

14 m. to Intertaken—13½ m. thence to Brienz.

Though rather a hot walk in fine weather, it is surprising that the N. shore of the Lake of Thun is not oftener visited by pedestrian tourists, as it abounds with objects of interest and exquisite scenery. A char-road leads to *Oberhofen*, about 3 m. from Thun, a village with a fine castle, said to date from the 5th century, restored by the late Count Pourtalés of Neuchâtel. It is (or was) shown to strangers. From hence those who seek a wider view of the surrounding mountains and the low country may ascend the *Blume* (5,223′). The summit is reached in 2½ hrs., and the descent may be made by *Sigriswyl*, a large village finely situated on the slope above the lake, to *Rallingen*, situated in the direct way from Oberhofen to Neuhaus. Fully 5 hrs. must be allowed by those who make a détour to the summit, but 1½ hr. suffices to reach Rallingen for those who follow the mule-path along the lake. About 1 m. farther is *Merlingen* (Inn: Löwe), at the opening of the Justithal, a narrow and deep cleft between the almost vertical rocks of the *Wandfluh* to the E., and the *Ralligstock* to the W. A day may be well spent in exploring this wild glen, and the geologist is rewarded by finding many neocomian fossils, especially cephalopods. [About 2 hrs. above Merlingen, on the slope of the Ralligstock, is a singular cavern, called *Schafloch* because the outer part is used to shelter sheep, one of the most accessible of the ice-caverns, to which attention has lately been directed by the interesting work of Mr. G. F. Browne. A guide with lights should be taken by those who wish to visit the cave. The ascent from the Justithal is long and steep: Mr. George recommends an easier way from Sigriswyl, mounting diagonally up the slope, and then by a steep zigzag gaining the ridge close under the Ralligstock. The way thence is nearly level, with one bit of steep descent. To reach Interlaken from the cave the traveller may pass over the Güggisgrat, descending to Beatenberg, or, keeping further N., pass by Brandisegg in the upper part of the Habkerenthal.]

The track from Merlingen leaves to the rt. the headland called Nase, conspicuous from the lake; and a little farther on a path to the l. mounts to the village of Beatenberg, while that leading to Neuhaus is carried along the steep face of the mountain to the *Beatenhöhle*, or cave of St. Beatus, a (British?) saint, who is reported to have preached the Gospel in this region, and made his home in the cavern, in the second century. The size of the vault and the stalactites that adorn it are boasted of by the local guides, though deserving little notice; but few spots can be cited that present so exquisite a picture as that offered to the spectator issuing from the cavern, who sees as in a frame the peaks of the Jungfrau range rising above the intermediate mountains between the blue sky above and the blue lake below. Many who make the excursion from Interlaken hire a boat at Neuhaus (5 fr. to and fro), and land at a point whence the ascent to the cave is made in ¼ hr. The foot-path to Interlaken is carried along steep, and in some places slippery, rocks, and slopes of débris, requiring care, till it descends to the village of Sundlauenen. It then traverses the Sündbach torrent, passes the baths of *Kublis*, crosses by another bridge the Lombach, and immediately after reaches Neuhaus. Fully 5 hrs. should be allowed for the walk from Thun to Interlaken, but the traveller will do well to devote a long day to the expedition, giving himself time to enjoy it thoroughly. If a geologist, he will not fail to examine the deposit about Ralligen, known as Ralliger Grit, apparently belonging to the flysch, yet differing much from those of the same age de-

veloped on a large scale at the base of the Niesen on the opposite side of the lake.

The foot-path along the S. side of the L. of Brienz leaves the high-road at Böningen near Interlaken (see above). It cannot be compared for beauty and variety of scenery to that just described, but is pleasing, and offers much more shade. The track is rough, and involves many short ascents and descents. From *Sengg*, nearly half way on the S. shore, a steep path, fit only for practised mountaineers, leads to the Faulhorn (Rte. B). About ½ hr. farther is the pretty village of *Iseltwald*, and ¾ hr. more suffices to reach the Giessbach Hotel. Those bound for Brienz will do well to take the steamer or a boat from the Giessbach, as the foot-path is circuitous and not very interesting; but if bound for Meyringen or Reichenbach they may follow a very agreeable path, chiefly under trees through a dell called the Enge, afterwards passing along the base of the mountain, till it joins the road from Brienz near the first bridge over the Aar.

Route B.

MEYRINGEN TO INTERLAKEN, BY GRINDELWALD AND LAUTERBRUNNEN.

	Hrs.' walking	Eng. miles
Rosenlaui . . .	3	8
Great Scheidegg . .	2	6
Grindelwald . .	2½	7
Little Scheidegg . .	3	8
Lauterbrunnen . .	3	7½
Interlaken . . .	2½	8½
	16	45

It is to the route here described that the Bernese Oberland owes the greater part of its celebrity, for there is none other in the Alps where a very moderate effort, without even the semblance of risk, enables a stranger so fully to enjoy the union of the most picturesque with the most sublime elements of natural scenery. A very moderate walk, an easy ride, or, if need be, the chaise-à-porteur, brings within the reach even of delicate ladies scenes not surpassed by those which the mountaineer seeks in spots of difficult and perilous access. The natural consequence is, that the two passes here described are by far the most frequented in the Alps. During the fine season a ceaseless stream of tourists of all nations flows in opposite directions over the great Scheidegg and the Wengern Alp. If the lover of solitude and quiet be tempted to complain, he will not, if a practised mountaineer, have much difficulty in striking out a course for himself far enough from the beaten track to leave him the undisturbed enjoyment of the scenery.

The ascent to the Great Scheidegg commences close to the Reichenbach Hotel on the l. bank of the Aar, ½ m. from Meyringen (see last Rte.). Most travellers turn aside to see the Falls of Reichenbach, a series of 5 cascades, the lowest of which is but a short way above the hotel. The volume of water is not considerable enough to make them very noteworthy. The lowest, and the fourth, are best worth seeing, the latter being to be preferred. A toll is levied on strangers for crossing the meadow that leads to it, and another for entering the Belvedere from which it is seen to advantage. There is a better view from a projecting point of rock immediately overhanging the fall, and barely out of reach of the spray, but to reach this requires some steadiness of head and foot. The ascent of the slope on the rt. bank of the torrent is somewhat steep, and the path roughly paved. The mountain on the l. hand, forming the base of the range of the Engelhörner, rises steeply, and on looking back there is a fine view of the Haslithal which is soon lost to sight. [A traveller going from Grindelwald to that valley, and not caring to see the Reichenbach, may reach Hof in 2½ hrs., descending from Rosenlaui by a rough path (passed on the l. in ascending) that leads first

to the hamlet of *Geisholz*, and then to the Kirchet (Rte. C).] The path through the glen traversed by the Reichenbach torrent above the falls mounts very gently, and the scenery constantly increases in grandeur as the Wellhorn, and farther on the outer peak of the Wetterhorn and the Eiger, come into view. After passing Sagi, vernacular for a saw-mill, the track crosses the torrent to the broad green expanse of Breitenmatt enclosed by pine forests, beyond which the two peaks above named, and a part of the Rosenlaui Glacier, complete a picture to render which on paper or canvas is the constant but vain aspiration of alpine artists. In fine weather it is common to see several of the fraternity, each with his outspread umbrella, engaged in the same hopeless but exciting enterprise. The slender fall of the Seilbach is here pointed out by the guides; but if not already used to tiny waterfalls, the traveller will soon reach a condition of comparative indifference to them, save as details in a view otherwise remarkable. The path to the Scheidegg is carried along the l. bank, and it is not necessary to recross the stream, but no stranger should omit to lengthen the way by a few minutes' walk in order to visit the

Baths of Rosenlaui, beautifully situated in a pine forest a short distance below the foot of the glacier, and the base of the Wellhorn. The inn, which was burned down in 1860 and has been since rebuilt, supplies very fair accommodation at reasonable prices. The landlord is well acquainted with the alpine flora, and sells collections of dried plants more correctly named than those commonly found in Switzerland. The specimens of carved wood kept for sale here are superior to those usually found elsewhere in the Oberland. The mineral waters, charged with alkaline salts, supply baths which are resorted to by a few Swiss visitors.

The neighbouring *Rosenlaui Glacier* has been justly famed for the beauty and purity of its ice-masses; but like most other Alpine glaciers its appearance has been marred of late years by the melting of its mass, and access to it is more difficult than it used to be. On approaching the glacier, the torrent issuing from its base is seen to flow in a cleft, fully 200 feet deep, that it has cut for itself in the limestone. The surface of the surrounding rocks is rounded and smoothed by the passage of the glacier at some not distant period. The glacier originates in a vast plateau of névé lying NE. of the peaks of the Wetterhörner (Rte. K), and descends first NE., then about due N., between the *Wellhorn* (10,486′) and the *Engelhörner*; having no medial moraine, its surface is almost entirely free from the blocks of stone and piles of gravel that too often soil the purity of the icy surface. The stranger who has had no previous acquaintance with glaciers may here form some idea of their beauty, though not of their dimensions, as this is on a smaller scale than the two Grindelwald glaciers, which are themselves greatly surpassed by those of the Aar and Aletsch on the opposite side of the Oberland group. An ascent of a little more than 1 hr., not without a guide, will take the traveller to the summit of a rock on the rt. bank, whence he may overlook the greater part of the glacier (see Rte. L). The botanist may find a considerable portion of the alpine flora of central Switzerland on the slope near the glacier, in the openings of the pine forest near the baths, and on or near the path leading thence to the Scheidegg. Travellers going from the glacier to Grindelwald, or vice versâ, may save 20 minutes by taking a rough path that joins the mule-track some distance above the inn.

The ascent from Rosenlaui to the Scheidegg is in most places very gentle; at first the Wellhorn claims attention, but the stupendous precipices of the Wetterhörner rise more and more grandly as the traveller approaches the top of the pass. From the summit of the rocky wall crowned by the exquisitely-formed conical peak of the outer

Wetterhorn, or Hasli Jungfrau, and from several other points where small masses of glacier have accumulated on shelfs or ledges of the mountain, masses of ice are occasionally discharged, forming avalanches of the same character as those of the Jungfrau more fully noticed below. Being well acquainted with the ground, the writer may safely contradict the assertion that the fragments discharged from these avalanches can at any time reach to or even approach the path followed by tourists. The distance is far greater than an ordinary observer would suppose, and the intervening space full of inequalities. Each of the ordinary channels of these avalanches gives rise to an accumulation of ice-fragments, and when sufficiently copious these are ultimately consolidated into a single mass, and form miniature glaciers. In their origin and their form these exactly resemble the piles of gravel and débris formed by mountain torrents issuing from a ravine on to more level ground, and called by geologists *cones of dejection*. The only essential difference is, that when the fragments are formed of ice instead of stone they become welded together into a continuous mass by virtue of the property of regelation. See Introduction, Art. Glaciers. The most considerable of these accumulations, called by some Swiss writers '*glaciers remaniés*,' is the *Lower Schwarzwald Glacier*. It may be reached by a rather deep depression, lying between the path from Rosenlaui to the Scheidegg and the base of the precipices connecting the Wetterhorn with the Wellhorn. The détour necessary to take it in the way to Grindelwald is little more than ½ hr., and will well reward those interested in the study of glaciers. Travellers not familiar with such localities must be reminded to use much caution in approaching the places where the ice-avalanches fall. The discharges are renewed at longer or shorter intervals according to circumstances, and to be caught in the path through which they descend involves rather more risk than to charge a battery of guns laden with grape-shot.

The ordinary traveller, keeping to the beaten track, admires these phenomena at a distance, which is not only safe, but too great to enable him to form a correct idea of the mass of fragments, that at a distance looks no more than the spray of a small waterfall on the face of the precipice. It is the sound alone that can lead him to suspect that at each fall very many tons of ice are precipitated down the face of the mountain. The echo returned from the face of the Wetterhorn, awakened by an ordinary Swiss cow-horn, when heard in calm weather, is most exquisite from the softness and clearness of the tone, and the long interval that elapses before it is returned to the ear, and well deserves the small coin with which all travellers reward the performer. It is best heard from the W. side of the pass.

The *Grosse Scheidegg* (6,910′) is a narrow ridge connecting the base of the Wetterhorn with the range of the Faulhorn and Schwarzhorn. The small inn at the top supplies poor accommodation at high prices. The traveller who is fortunate as to weather should here turn aside from the path to Grindelwald to visit the Faulhorn (p. 70), or if much hurried may follow the path to it as far as the Grindelalp, and descend to Grindelwald by a détour of only 1 hr.

[The ascent of the *Schwarzhorn* (9,507′) may be made with a guide in 3½ hrs. from the inn on the Great Scheidegg. This is the highest summit of the Faulhorn range, and in the opinion of Mr. G. Studer the view is decidedly superior. It includes the snowy peaks from the Titlis to the Galenstock, described in the next §, with the summit of the Tödi in the E. horizon; but it may be doubted whether it is so favourable a point for viewing the greater peaks of the Oberland. It may be reached by an active walker in 5 hrs., either from

Grindelwald or the Baths of Rosenlaui.]

No amount of familiarity can much lessen the effect of the glorious scene that opens before the eyes of one arriving on the Scheidegg from the E. side; and it is in order to enjoy this in perfection that the writer recommends travellers to take this route from the side of Meyringen, rather than from Lauterbrunnen. The view from the Faulhorn is doubtless more complete, but except for those who make the difficult ascent by the N. side of that mountain, the effect is not heightened by the charm of surprise. Beyond the Wetterhorn rises to the S. the stern peak of the Schreckhorn. To this succeeds the rugged ridge of the Mettenberg, and behind it the snow-capped Mönch, and the Eiger towering more than 9,000 ft. above the village of Grindelwald, with its green valley, and cornfields, and orchards. To the NW. the range of the Faulhorn and Schwarzhorn, dwarfed by the huge masses with which they are contrasted, closes the view.

The descent towards Grindelwald is easy, but steeper than the path from Rosenlaui. Nearly half way the track crosses the stream of the Bergelbach, and soon after approaches near to the lower end of the Upper Glacier, or *Ober Grindelwald Glacier*. A détour of about ¼ hr. from the regular track suffices to reach a place where it is possible to descend into a cavity, and advance a short way under the bed of the glacier. Owing to the shrinking of the ice of late years ladders are now required for the descent. The difficult pass of the Lauteraar Joch (Rte. K) is reached by the steep rocks on the NE. side of the glacier. 1 hr. more suffices to reach

Grindelwald (Inns: Adler; Bär; Eiger, new; all three good, but not cheap; Zum Gletscher. new, cheaper, nearest the glacier, visitors taken *en pension* at 6 fr. a day), a rather large village (3,773), one of the natural centres for Alpine travellers. There is none other so easily reached which lies so close to the foot of such great peaks, and in the immediate neighbourhood of two great glaciers. Christian Almer, Peter Michel, Peter Bohren, P. Baumann, and P. Inäbnit, guides already noticed in the Introduction, reside here. and there are many rising men who may be taken on difficult expeditions. The two first-named, who rank amongst the best in the Alps, are generally engaged during the summer by members of the Alpine Club. Peter Rubi, who earned high praise as porter in the difficult passage of the Jungfrau Joch, has become a regular guide. Christian Roth is highly recommended as a porter on glacier expeditions. It is a drawback to the pleasure of persons remaining for some days at Grindelwald that most of the paths near the village are roughly paved, and often used as channels for the rivulets intended to irrigate the adjoining meadows.

The excursion most frequently made from Grindelwald is to the Lower Glacier, or *Unter Grindelwald Glacier*. This great ice-stream, far more considerable than the upper glacier, originates in a great amphitheatre lying between the Mettenberg, Schreckhorn, Walcherhörner, Vieschergrat, and Eiger. It descends towards Grindelwald in a fine ice-fall through the comparatively narrow opening between the Mettenberg and the Eiger. Some visitors content themselves by going merely to the foot of the glacier, less than 2 m. from the village; charge for a horse to and fro 3 fr. Seen from below, it does not offer any very remarkable features. Far more interesting is the excursion to the Eis-meer, or Mer de Glace, which is accessible by a tolerably good path mounting by the rt. bank of the ice-fall. Horses are sometimes taken for the ascent, but it is scarcely advisable to take them all the way, as the path is carried along very steep slopes immediately overhanging the glacier; and a slip might have serious consequences. Those who are unable

to walk will do better to take a chaise-à-porteur. The excursion is often compared to that of the Montanvers from Chamouni; but has far more resemblance to the ascent to the Chapeau, since in both cases the path immediately overlooks an ice-cascade with its shattered towers and minarets separated by profound crevasses. After passing through some meadows, the branch of the Lütschine torrent descending from the upper glacier is crossed; and the ascent begins through the forest which covers the W. base of the Mettenberg. Less than 1 hr. is needed to reach a rocky point called Fluelenegg, beyond which it is not prudent to take horses. Thenceforward the path lies along ledges on the face of the rocks; but with ordinary care it is quite free from danger, save to persons subject to giddiness. A curious hollow in the rock is pointed on in connection with a legendary tale, like many others common in the Swiss Alps, respecting the giant St. Martin. The saint on some occasion is said to have seated himself on this side of the valley while he drove his staff through the rocks opposite. A perforation in the ridge of rocks descending from the Eiger, called the Heiterloch, through which the sun sometimes shines, proves the authenticity of the legend.

Many travellers are content to reach the *Bänisegg*, where refreshments, and in case of need beds, are found at a châlet commanding an admirable view of the glacier, and the grand peaks that enclose it. Those who wish to make closer acquaintance with the new world here opened before them usually extend the excursion as far as the Zäsenberg. The path which had been followed along the rocks comes to an end above the ice-fall, at a point where the glacier, nearly level, may be traversed without difficulty. According to the height of the glacier, planks or ladders are used to pass from the rock to the ice. The ice has of late shrunk greatly, and the Eismeer was in 1865 fully 100 ft. lower than in 1861. It takes 1 hr. to reach the *Zäsenberg*, a patch of Alpine pasture at the base of a rocky promontory that divides the E. branch of the glacier from the S. branch descending from the Mönch Joch (Rte. I). Though not nearly so high, and much easier of access, the view from this point, whence scarcely anything is visible save the surrounding ice-fields and the great neighbouring peaks, may almost rival that from the Jardin near Chamouni. The upper basin of the glacier, often called by the guides Grosse Eismeer, is reached in two hours from the Zäsenberg; but the way is too rough for most ladies. It is possible, but not very easy, to return to Grindelwald by the l. bank of the glacier. In this excursion strangers going beyond the Bänisegg should take a guide. The uniform tradition prevalent throughout a great portion of the Central Alps, which declares that the glaciers formerly covered considerably less space than they now do, appears to be confirmed in the case of the Lower Grindelwald Glacier by authentic documents. It appears certain that the lower ice-fall occupies ground which was partly covered by pine forest at the beginning of the 17th century, and probable that a pass, in great part free from ice, existed between Grindelwald and the valley of the Rhone. An old church-bell, said to be of the 11th century, is shown at Grindelwald, and is believed (on what authority?) to have belonged to a chapel of St. Petronilla which stood on or near to the ancient pass.

An excursion rarely made from Grindelwald, yet very interesting and not difficult to practised mountaineers, is the ascent of the *Mettenberg* (10,443′). This is the great broad-topped ridge extending NW. from the Schreckhorn, and separating the upper and lower Grindelwald glaciers. It is especially interesting to geologists on account of the position of the limestone strata, which are curved in the form of a C, and underlie the gneiss of the Schreckhorn range. Ascending from the châlets of *Stieregg* on the rt. bank of the lower glacier, a short way beyond the Bänisegg, ‘Grass slopes lead up to

the ridge from which a view of Grindelwald is obtained, and from thence there is an easy (?) route along the ridge to the summit. This is nearly equidistant from the Schreckhorn, Wetterhorn, and Eiger, of all which, as well as the low country, it commands very fine views.' [L. S.]

Much more arduous is the ascent of the *Klein Schreckhorn* (11,473′), first attained by Mr. Anderson. An easier course was taken by Mr. H. N. Dering and Prof. Aeby in 1865. Turning to the l. from the way to the Strahleck (Rte. K) they ascended by the Nässi Glacier and returned to Grindelwald in 18 hrs., including halts of 2 hrs.

The excursion from Grindelwald deservedly most in favour with those travellers who desire to view the upper region of the Alps without risk or much fatigue, is the ascent of the *Faulhorn* (8,799′). For horses, &c., see tariff in the introduction to this §. Within the last few years many points of view have been made accessible which may count as worthy rivals to this; but there are few which combine an extensive panorama with so grand and near a view of the giants of the Alps and great glaciers. The fact of there being a tolerable inn at the very summit is an additional attraction.

Tourists who reach Grindelwald from Meyringen by the Scheidegg, should follow the path (noticed below) leading from that pass to the Faulhorn; others usually take the direct route from Grindelwald, which occupies about 4½ hrs. in the ascent, and 3 hrs. in descending Though the way is perfectly safe for animals as well as men, and the track well beaten, it is quite possible to go astray, especially in the lower part of the ascent, where many paths branch off in various directions. The lower part of the way lies through meadows and pine wood, in some places rather steep, and about half way passes the châlets or *Sennhütten* of the Bachalp, where alpine fare, milk, bread, butter, and cheese, are found. Not far is a pretty fall of the torrent which drains the Bachalpsee. The path is carried along this alpine tarn lying E. of the *Simelihorn*, making a circuit round that peak and mounting through a wild hollow, where the shrill squeak of the marmot is often heard. and patches of snow often lie throughout the summer, till it reaches the base of the final ridge. A good path mounts by zigzags and reaches the Inn, a few yards below the topmost ridge of the mountain. Considering the height, this supplies tolerable quarters at not unreasonable prices. Travellers should recollect that at such a height the cold at night is often severe, and should be provided with ample covering. The bedrooms (?) are mere closets separated by wooden partitions, and contain two beds each. In fine weather the house is often overcrowded, and those who do not arrive early cannot count upon beds.

The Faulhorn is one of the higher summits of the range extending between the L. of Brienz and the main mass of the Oberland Alps. The panorama on the side of Switzerland is in itself very fine, extending from the mountains of Uri and the Lake of Lucerne, to the range of the Jura and the mountains W. and S. of the L. of Thun; but the main feature in the view is the noble group of the Oberland peaks, of which the Finsteraarhorn, the Schreckhorn, and the Wetterhorn, are especially remarkable. The first-named especially, as here presented, seems a mere obelisk, far more slender and sharply pointed than the Matterhorn, and the attempt to reach the summit must appear a mere act of insanity. It must not be denied that the view of these and the neighbouring snowy peaks is somewhat injured by the intrusion of a ridge with two summits, the Simelihorn and Röthihorn, both exceeding the Faulhorn in height. These shut out from view the greater part of the Valley of Grindelwald and the Lower Glacier. 'Both are accessible from the Faulhorn, but it is useless to ascend the former, as the view is partially masked by the Röthihorn. From the summit of the latter the tra-

veller obtains a view similar to that from the Brévent, as he looks down upon the fertile Valley of Grindelwald, and across it to the great peaks of the Oberland Alps.' [W. M.]

Valuable meteorological and other observations were made on the Faulhorn during several successive seasons by MM. Martins and Bravais.

Besides the way from Grindelwald above described, there are several others, that from the Scheidegg Pass being the easiest. A well-marked path winds from thence along the slope nearly at a level, until in about 2 hrs. it joins the path from Grindelwald in the rocky hollow on the E. side of the Simelihorn.

The ascent from the Giessbach is much longer and steeper than that from Grindelwald, and should not be undertaken without a guide; but it has the great advantage of presenting suddenly the grand view of the Oberland peaks at a height but little below the summit of the mountain. The way lies by the Giessfall falls, and in 3 hrs. reaches the Tschingelfeld, an alpine pasture. The direct way to the summit is by an ill-marked track, in part up steep slopes of débris; but the better course is by another track that joins the new path from the Schienige Platte, mentioned below.

A still steeper way, fit only for practised mountaineers, mounts from *Sengg* on the L. of Brienz. 4½ hrs. exclusive of halts, suffice for an active walker. A guide is necessary for this as well as the two following routes, which are but little used.

From the new inn on the plateau of the Schienige Platte, mentioned among the excursions from Interlaken, a new bridle-path leads to the summit of the Faulhorn, traversing the Iselten Alp and the southern slopes of the Laucherhorn, till it descends slightly to the little lake of Sägis, whence it crosses the ridge of the Schwalhorn to reach the summit. Allowance for halts, 5 hrs. should be allowed for this expedition.

An extremely steep track mounts from the hamlet of Schwände, about 2½ m. below Grindelwald in the defile of the Schwarze Lütschine. This is probably the shortest of all the paths leading to the Faulhorn; 4 hrs. are said to suffice for the ascent.

Travellers who are unable to walk or ride, or who encounter bad weather, may go direct from Grindelwald to Interlaken, a distance of 13 m., by the carriage-road which descends the valley of the Schwarze Lütschine, till at Zweilütschinen it joins the road from Lauterbrunnen described below. For the first 3 or 4 m. the road lies through a mere defile, which opens somewhat at *Burglauenen* (3,160′). The descent then becomes more rapid; the valley is partly obstructed by blocks fallen from the mountains on either side.

In fine weather no one going from Grindelwald to Lauterbrunnen or Interlaken will fail to take the track of the Little Scheidegg and the Wengern Alp; and many who desire a closer acquaintance with the wonders of nature in the Alps will be tempted to spend one or two days at either of the little inns on the way.

The ordinary and direct path crosses the *Schwarze Lütschine*, formed by the union of the torrents from the two glaciers of Grindelwald, and mounts over ground rendered wet and marshy by landsprings to the châlets of Alpigeln. Those who have not already visited the base of the Unter Grindelwald-Gletscher, may do so by a détour of about ½ hr., and at the same time see the *Nellenbalm*, or cave of St. Petronilla, a cavity in the limestone rock at the base of the Mittelegi. This name is given to the promontory extending NE. from the Eiger, which on this side sustains the Grindelwald Eismeer, leaving only the narrow opening between itself and the base of the Mettenberg, through which the ice-fall of the lower glacier makes its way to the level of the valley. The cavern is remarkable only for its position; the opening commands a striking view of

the pinnacles of ice of the lower part of the ice-fall.

The châlets of Alpigeln lie nearly half way in the ascent from Grindelwald; strawberries, cream, coffee, &c., tempt the passing tourist to loiter on the way. From hence, and throughout the ascent, the *Eiger* (13,045′) asserts its claim to rank as one of the grandest objects in the whole range of the Alps. Less elegant, but more massive than the Aiguilles of Mont Blanc, it rises in one continuous pile of rock, so steeply that scarce a patch of snow can cling to its flanks, nearly 10,000 ft. above the lower glacier that lies at its base. The mountain does not properly form part of the main range. It is a huge limestone buttress, projecting from the granitic mass of the Mönch, and the glaciers on either flank feed two branches of the same stream—the Lütschine—that flow together to Interlaken. (See Rte. I). The summit was first attained in 1858 by Mr. C. Harrington, with Christian Almer and other Grindelwald guides. The ascent, which was repeated in 1861 by Dr. Porges, and since then by several English travellers, is usually difficult and laborious. The ascent is made by the very steep NW. angle of the mountain. The rocks are easy to climb, except when glazed with a coating of ice. Under very favourable circumstances one party, in 1864, completed the ascent and return to the Wengern Alp under 9 hrs.

Above the châlets are some remains of a forest of Siberian pine (*Pinus cembra*), here called Arven—in Piedmont and the Valais, Arolla—found throughout the Alpine chain, but not common in places visited by tourists. The seed is eatable, and children here offer the cones for sale. About 3 hrs.' steady walking from Grindelwald suffices to reach the summit of the *Kleine Scheidegg* (6,768′) A very good little inn, H. de Bellevue. supplies refreshment to wayfarers, and very fair accommodation to those who remain for the night. The great advantage of the position of the pass, which has made it celebrated beyond almost any other in the Swiss Alps, arises from the fact that it stands just opposite to the point where the Bernese range makes a salient angle, whose apex is the Eiger. From thence a series of high peaks rise in line towards the NE., ever on the left hand of the traveller who has followed a direct course from Meyringen to this point. On the other side the still higher summits of the Mönch, Jungfrau, Gletscherhorn, and Mittaghorn follow in succession from N. to S. Concealed by the Eiger from the neighbourhood of Grindelwald, and but imperfectly seen from the Faulhorn, the Mönch and Jungfrau here break upon the traveller in full grandeur, rising from the narrow gorge of the *Trümmletenthal*, which lies like a trench cut along the base of this gigantic wall, while on the rt. hand the slopes of the Wengern Alp, traversed by an easy path, form a terrace, whence strangers from all countries are enabled without difficulty or fatigue to survey the scene. Three comparatively large glaciers, with several minor accumulations of ice, are found in the hollows and on the shelving ledges of the three peaks that rise above the Trümmletenthal. To the N. is the *Eiger Glacier*, lying in the recess between the Eiger and the Mönch. This is separated by a huge projecting buttress of the latter mountain from the *Guggi Glacier*. Farther on is the *Giessen Glacier*, formed, at a higher level than the two last, on a shelf of the NW. side of the Jungfrau. A vast buttress, attaining almost the dimensions of a mountain range, extends somewhat N. of W. from the Jungfrau. Its chief summit is the *Silberhorn* (12,106′), and it terminates in the rocky peak of the *Schwarz Mönch* (8,675′), lying in the angle between the Trümmletenthal and the valley of Lauterbrunnen.

The name *Wengern Alp* is often given to the pass of the little Scheidegg,

but it properly belongs to the entire tract of Alpine pasture on the N. side of the Trümmletenthal over which the path to Lauterbrunnen is carried. On this slope, less than ½ hr. from the summit of the pass, is a large new inn on the site of a building formerly well known to tourists as Hôtel de la Jungfrau. The upper inn is more convenient for some excursions, but the H. de la Jungfrau is better situated for a view of the avalanches that are among the most striking objects attracting the attention of travellers who cross this pass.

Such avalanches are not infrequent in the High Alps, but there are few spots where they are exhibited so frequently or on so grand a scale; certainly none where they can be viewed so easily, and with so little risk or fatigue. This arises from local conditions here unusually favourable. The Giessen Glacier, as has been said, rests on a high shelf of the Jungfrau. This lies above a nearly vertical precipice of rock some 2,000 ft. in height. As the glacier is gradually urged over the edge of this precipice, huge blocks are from time to time detached: when they reach the lower level at the base of the precipice, the form of the ground is such that all the fragments fall into a ravine or gully nearly 1,000 ft. in vertical height, until at its base they issue upon a conical pile, or *talus*, of ice débris, forming a *glacier remanié* that descends into the depths of the Trümmletenthal. Seen from the *Wengern Alp*, at the distance of about a mile, the appearance of one of these avalanches bears no proportion to the prolonged roar that accompanies the fall. An unpractised eye may wander for a while over the vast face of the mountain without detecting any apparent cause for the peculiar and impressive sounds that accompany the phenomenon. A slight vaporous cloud, resembling the spray from a waterfall but more dense, is the first token that is perceived, and then a fall of what seems no more than a small mass of snow. As the avalanches in warm weather are frequently renewed—once in every ½ hr., or even oftener—the spectator is enabled by practice to seize the earlier portion of the operation, and to descry the ice-blocks at the moment when they are detached from the upper glacier and fall over the cliffs, the descent being partly completed before the sound reaches his ear.

Travellers had long continued to content themselves with the distant view of these avalanches which is gained from the Wengern Alp, and were deterred from approaching nearer to the immediate scene of operations by hearing of many fatal accidents to men and cattle, struck by descending masses of ice or stone in the dangerous vicinity of the opposite cliffs. Mr. Francis Galton, the well-known traveller, was the first to discover a way by which it is sometimes possible to approach with safety to gain a near view of the ice-cataracts. Mr. Galton observed that the ravine above described is so deeply cut into the precipice that all the materials of the avalanche must fall through that channel; and further, that the rocks on the E. side of the base of the ravine are so formed that it is possible to approach close to the point where the avalanche issues from the cleft, and begins to spread its contents over the talus. It is sufficient to take such a course as shall avoid the possibility of trespassing on the path followed by the ice-blocks. Starting either from the Bellevue or the Jungfrau Hotel, an easy descent leads the traveller down a bridge over the torrent that escapes from the Eiger Glacier. Beyond this it is necessary to cross a small *glacier remanié*, called by Mr. Galton Kuhe Glacier, and said to derive its name from the destruction of 300 cows by a single avalanche that fell here in the spring. The ascent of the base of the Jungfrau lies up grassy slopes broken by two steep terraces of rock, each about 30 ft. high and involving a bit of rather difficult scrambling. The

guide may carry a rope with which to help an inexperienced cragsman. A narrow belt of stony sward lies between the topmost cliff and the base of the great precipice, and leads in 1½ hr. from either inn to the lower end of the ravine. Here he will find overhanging cornices of rock where the fall of the avalanches may be awaited in perfect security. The effect is described as highly impressive, and even startling. Along with the roar which announces the approach of the main mass, a black cloud of snow-dust is shot out from above far beyond the observer's head. Singular to say, in fine weather this cloud is completely dissipated before it reaches the base of the precipice, the snow-dust being first melted, and then evaporated in the course of its descent. Subsequent travellers declare that the risk of falling stones in approaching the spot in question is sometimes serious.

A longer excursion, not difficult for practised mountaineers, may be made from either of the inns on the Wengern Alp. This consists in ascending the great buttress of the Mönch lying between the Eiger and Guggi glaciers, which is easily reached by crossing the former. The ascent is much less difficult than it appears when seen from a distance, and is interesting for the near view of the way to the Jungfrau Joch (Rte. I), of which this buttress forms the first stage. The excursion may be extended to the middle plateau of the Guggi Glacier, or the climb may be continued to the summit of the buttress. A day may be pleasantly spent at the Wengern Alp in wandering over the alpine pastures N. of the Little Scheidegg, lying between the two branches of the Lütschine. The chief summits are the Tschuggen and the Laubhorn, neither rising more than a few hundred feet above the plateau. Glorious views in various directions may be gained with little exertion, and the botanist will find the alpine flora richly represented.

The ascent of the *Silberhorn* (12,106′) is a very laborious and difficult, and may be a dangerous expedition. A first attempt by M. v. Fellenberg was made from the Stufenstein Alp on the E. side of the valley of Lauterbrunnen in June 1863. After 9 hrs. of most perilous climbing the party encountered an impracticable precipice of rock, and were forced to return. In the following month of August MM. Bädeker and v. Fellenberg, with the two Michels of Grindelwald, and others, reached the summit from the Wengern Alp. Ascending by the Guggi Glacier, they passed a night on the rocks at the foot of the Schneehorn, a buttress of the Jungfrau dividing the Guggi and Giessen Glaciers. On the following day they gained the desired summit by a long and difficult circuit under the cliffs of the Jungfrau.

Still longer and equally difficult is the ascent of the *Jungfrau*, first effected from this side in 1865 by Mr. H. B. George, and Sir G. Young, with Christian Almer and J. Baumann as guides. Having passed the night on the rocks of the Schneehorn they gained next morning the Silber Lücke, the depression between the Jungfrau and Silberhorn, and thence in little more than 3 hrs. reached the summit. Descending to the Aletsch Gl. they crossed the Mönch Joch, and passed a second miserable night on the rocks, reaching Grindelwald next day after 21¼ hrs. actual walking.

Attempts to reach the summit of the Mönch from the Wengern Alp have hitherto been unsuccessful (see Rte. I)

The track leading from the Wengern Alp to Lauterbrunnen turns to the NW. away from the Trümmletenthal, and is so well traced that it is impossible to miss the way. On reaching the verge of the steep descent into the valley of Lauterbrunnen, there is a choice of paths. The main track goes down directly to the village, but those who wish to reach Interlaken at once may save nearly ½ hr. by taking a path to the rt., still steeper than the other, by which they gain a bridge over the

Lütschine leading to the carriage-road 1 m. lower down. In descending from the Little Scheidegg 2½ hrs. (5½ hrs. from Grindelwald), exclusive of halts, suffice to reach

Lauterbrunnen (Inn: Steinbock or Capricorne, good, but very dear; H. Lauterbrunnen; H. Staubbach, rather rough but clean), a small village (2,730′), famous for the surrounding scenery. Being within a drive of 1½ hr. from Interlaken, comparatively few tourists who pass this way sleep here. Means of conveyance — horses and chaises-à-porteur—with guides and porters in abundance, are in readiness here, and the population of the valley depends more on the annual harvest of strangers than on the scanty produce of the soil. The brothers Ulrich and Christian Lauener (named in the Introduction as guides) live near the village, and there are several other men fit to undertake difficult expeditions. A younger Christian Lauener, nephew of the first, is said to be a rising guide, while a third man of the same name, much older than the others, is an experienced and steady man, but rather over-cautious. Johann Bischof, on the contrary, is a bold mountaineer, apt to err on the side of rashness. He has made the ascent of the Jungfrau, Blümlis Alp, Doldenhorn, &c.

The *Valley of Lauterbrunnen* is one of the deepest in the Alpine chain when compared with the height of the mountains that rise directly on either side. It is a true cleft, rarely more than ½ mile in width, between limestone precipices, sometimes quite perpendicular, everywhere of extreme steepness. It is to this form of the valley that it owes the numerous waterfalls from which it derives its name. The streams descending from the adjoining mountains, on reaching the verge of the rocky walls of the valley, form cascades so lofty that they are almost lost in spray before they reach the level of the valley. The most famous of these is the *Staubbach* —literally Dust-Cascade—within less than ½ m. of the inn at Lauterbrunnen. After rain, and early in the season when fed by the melting snows, this is a very striking object. The force of the stream above the fall is then sufficient to carry the water clear of the precipice, and the whole mass descends in a condition of liquid dust, between spray and cloud, that sways to and fro with the gentlest breeze. In a dry summer, when the supply of water is much reduced, the effect is comparatively insignificant. The height of the cascade is between 800 and 900 ft., probably the highest in Europe formed of a single unbroken fall. That of Gavarnie exceeds this considerably in total height, but is broken on an intermediate ledge. The Staubbach should be seen in the morning when the sun falls on it from the SE.; the effect is also very striking by moonlight. For the excursion to the Schmadribach and the head of the valley, one of the most interesting to be made from Lauterbrunnen, see Rte. F.

An extremely interesting expedition, which may be combined with the passage of the Sefinen Furke (Rte. F), but is now often made by tourists from Interlaken, is the ascent to Mürren and the adjoining peak of the Schilthorn. The bridle-path to Mürren turns aside close to the village of Lauterbrunnen, and ascends through a ravine cut by a mountain torrent into the W. wall of the valley. The way is steep, but has the advantage of being shaded from the sun. From time to time the traveller gains beautiful views, in anticipation of the wider prospect that awaits him higher up. After mounting about 1,000 ft. above the valley, the path attains the upper pastures, bears to the l., and crosses the Pletschbach, which is the stream that feeds the Staubbach cascade; the bridge is reached in 1¼ hr. from Lauterbrunnen. The direction now followed is nearly due S., parallel to that of the main valley, the ascent being gentle, and lying in part through pine forest. The views, as the path reaches

projecting points on the slope, are more and more grand, and in 2½ hrs. the traveller reaches the hamlet of *Mürren* (5,348′), a group of old houses built of pine-trunks, grown black from age, with a new inn (zum Silberhorn), affording excellent accommodation. There have been some complaints as to prices; but recent accounts are favourable. Those who remain some days may well make an agreement as to terms. Johann Feuz of Mürren is said to be a good local guide.

Very few points can be named in the Alps that surpass this mountain hamlet in the magnificence of the view that is laid before the eyes of its inhabitants, but, until lately, it was unknown and unheeded by strangers. It may be compared in some respects with that from the Flégère, in the valley of Chamouni, or the Riffel Inn, above Zermatt; but neither of those sites overlook a trench so deep and precipitous as the valley of Lauterbrunnen; and the base of the Mont Blanc range, and that of the peaks above Zermatt, exhibit no such formidable ranges of precipices as those of the W. face of the Silberhorn and Jungfrau, and the circuit of great peaks extending thence to the Tschingelhorn. The view is rather more complete from the Almendhubel, ¼ hr. above the inn.

The ascent of the *Schilthorn* (9,728′) from Mürren cannot be called a difficult expedition, but it requires a guide, and is somewhat too rough and fatiguing for ladies who are not much used to alpine walking. A rough path mounts NW. over alpine pasture and slaty rocks; after crossing the head of a stream it turns SW. through a narrow glen called Engethal. At the head of this glen, which commands a fine view of the peak, it is necessary to descend a little, passing on the N. side of a rocky hollow, which contains a dark pool or tarn. Crossing the stream that issues from a small glacier on the slope of the Schilthorn, a steep climb over loose slate leads us up to a minor summit, called Klein Schilthorn. This is connected with the highest peak by a rocky ridge, falling away rather steeply on either side, and leading to the final peak of the mountain. Of the view, it is enough to say that it deserves to rank near to that from the Cramont (§ 16, Rte. B). The summit is reached in 3½ hrs., exclusive of halts. In descending, the mountaineer may avoid the ridge and the Lesser Schilthorn by a glissade down the snow slopes.

Those who wish to visit the upper valley of Lauterbrunnen may turn SE. from the little tarn above mentioned, and follow a track by the Gümelen Alp (see Rte. F), where there is now a little mountain inn. Descending by the Sefinenthal into the main valley, Trachsellauenen is thence reached in 2 hrs.

The road from Lauterbrunnen to Interlaken lies through very beautiful near scenery; but it is only here and there that, on looking back, it is possible to gain a glimpse of the snowy peaks that enclose the upper part of the valley. The road lies all the way along the l. bank of the *Weisse Lütschine*, so called to distinguish it from the other branch descending from Grindelwald. For the first 3 m. the valley is contracted between the base of the *Vogelfluh* on the W., and the still bolder tower-like mass of the *Hunnenfluh* on the E. bank. On the l. of the road is the opening of the ravine of the Sausbach. A path leads that way to the Kienthal (Rte. E), passing the village of *Isenfluh*, which stands about 1,600 ft. above the valley of Lauterbrunnen. Though the view thence is not equal to that from Mürren, it well rewards the ascent, which may be made in rather more than 1 hr. from the road.

At *Zweilütschinen* (Inn: Bär, not bad), rather more than 3 m. from Lauterbrunnen, is the meeting of the two branches of the Lütschine, and of the valleys of Lauterbrunnen and Grindelwald. On the l., after passing the junction, is a block of stone, called Bösestein, that owes its title to the murder of a Baron Rothenflue, here

committed by his brother. On the opposite side of the valley is seen the plateau of the Schienige Platte. From the new inn there it is not difficult to reach the lake of Sägis and the summit of the Faulhorn. At the opening of Saxetenthal, a path leading to the Kanderthal (Rte. E) turns to the l. at the hamlet of Mülinen, and a few hundred yards farther is *Wilderschwyl*. A little farther are the ruins of the castle of *Unspunnen*. picturesquely situated on an isolated rock, deservedly a favourite point among the short excursions from Interlaken, which is less than 2 m. distant.

Route C.

MEYRINGEN TO BRIEG, BY THE GRIMSEL.

	Hrs.' walking	Eng. miles
Guttannen . . .	3	9
Handeck . . .	2	5
Grimsel Hospice . .	2	5
Obergestelen . .	2¼	6
Münster . . .	1⅓	4½
Viesch	3¼	10½
Brieg	3¾	12¼
	17¾	52¼

The distance by the new road between Brieg and Obergestelen is commonly reckoned 9½ Swiss leagues, but this is an over-estimate.

In the two preceding rtes. the portions of the Oberland, belonging to Canton Berne, most accessible, and most frequented by strangers, have been described. Next to the circuit leading the tourist from Interlaken by Brienz, Meyringen, Grindelwald, and Lauterbrunnen, back to his starting-point, the route most often followed is that which follows the Aar up to its sources in the great glaciers that encompass the bases of the Finsteraarhorn and the Schreckhorn, the point usually aimed at being the Hospice of the Grimsel. Of late years, since it has been known that the part of the Alps wherein the phenomenon of glaciers may be seen on the grandest scale is on the S. slope of the Oberland range, travellers have begun to frequent the Upper Valais, lying between the Glacier of the Rhone and Brieg at the foot of the Simplon. The carriage-road, lately completed from Viesch to the Furca by the Rhone Glacier, has much facilitated the approach of tourists to this side of the Oberland range, which belongs altogether to the Canton Valais. The excursions which are within the reach of ordinary tourists are described in this and the following rtes.

Meyringen and the Reichenbach are described in the last rte., wherein the traveller quitted the lower valley of Hasli in order to reach Grindelwald by the Scheidegg. The way to the Grimsel and the valley of the Rhone lies through the Haslithal, nearly to the point where the Aar breaks out from its parent glacier. The char-road along the l. bank of the Aar is carried for about 4½ miles beyond the Reichenbach Hotel, and a paved track extends to the Grimsel, so that a guide is quite unnecessary. Above the village of Meyringen the valley is traversed by a rocky barrier, 400 or 500 ft. in height, called the *Kirchet*.

It is by no means uncommon to encounter such barriers in the ascent of an alpine valley. They usually mark the ascent from a lower level to a higher step or plateau. In many of these cases there is reason to believe that the dam thrown across the valley must originally have formed a lake, which, in the lapse of ages, has been filled up, so as to form a flat gravelly plain, level with its summit. In the case of the Kirchet a similar process must have been going on; but long before the basin had been filled, the Aar seems to have cut for itself through the limestone rock a deep and narrow cleft, through which it makes its way to the lower valley. The cleft which gives a passage to the Aar could not,

however, even if it then existed, serve the same purpose when the great glacier of the Aar descended through the valley of Hasli. The traces of former glacial action, which are seen on so great a scale throughout the entire valley, are nowhere more obvious than on the Kirchet. The surface still gives evidence of the passage of the glacier in the general outline of the limestone rocks, and in the scoring and striation of the surface in places where the marks have been protected from the weather. A vast number of blocks of gneiss, derived from the central part of the range, were deposited on the Kirchet during the retirement of the glacier, and have been used in the construction of the Nydeck bridge at Berne, and for other buildings.

The cleft by which the Aar traverses the Kirchet is called in the local dialect Finstere Schlauche—in guide books, Finster Aar Schlucht. It is accessible at one point by another cleft which descends at right angles to it from a point near the road. A guide-post directs the traveller to this lateral cleft, wherein the entomologist may find some extremely rare beetles. The descent, which is well worth the trouble, is not difficult. The rights of property over this worthless tract of rock are asserted by a native who levies, or did levy, a toll on the curiosity of strangers.

From the summit of the Kirchet the traveller gains a fine view towards the head of the valley. Immediately below him lies the green plain, or ancient lake-bed, called Hasli Grund, forming the lower end of the *Ober Haslithal*, which opens to the SE. To the N. of E. is the valley of Gadmen (§ 25, Rte. E), and in the opposite direction, but at a higher level, the *Urbachthal* (Rte. M) penetrates into the heart of the snowy range. Those who wish to gain a passing acquaintance with the latter fine valley, may take a track to the rt. from the SE. slope of the Kirchet. A short excursion will suffice to give some idea of its very grand scenery. On returning it is possible to reach Guttannen by the l. bank of the Aar, following a very rough track through a pine forest that covers the W. slope of the valley.

The road winds in zigzags down the E. slope of the Kirchet, traverses the plain, and crosses the Aar to *Im Hof*, a hamlet with a good inn kept by A. Nägeli, at the junction of the valleys of Gadmen and Hasli. Not far off on the way to Gadmen is Mühlestalden, where lives Andreas Weissenfluh, a good and careful guide, well acquainted with the neighbouring Alps. His father, now rather past active work, was a well-known guide.

The ascent of the Mährenhorn, which may be made from Im Hof, is described in § 25, Rte. G. A paved track leads from Im Hof to the Grimsel. The scenery of the middle portion of the valley is fine, the rock and pine forest of the nearer slopes being often backed by some of the bold peaks that enclose it on the E. side. Nearly 1 hr. above Im Hof the path returns to the l. bank of the Aar at Schwanden. The valley widens at Im Boden—where the widow of the famous guide, J. Leuthold, offers refreshment at a wayside cottage—then again narrows to a defile, and in about 2 hrs. from Im Hof reaches

Guttannen (Inn: Hirsch, fairly good and reasonable), the highest village in the valley, 3,534 ft. above the sea. The upper valley of Hasli is a wild and barren glen, seemingly suffering from an especially ungenial climate, as cultivation here stops short at a far lower level than in other parts of Switzerland. The village has been twice burned down in this century, and suffered severely from the storm of 1834. This does not seem to have affected unfavourably the physical condition of the people. The men are usually active and muscular, and will carry weights over the rough mountain paths that would not be attempted by well-fed townsmen. Soon after leaving Guttannen the track crosses to the rt. bank at the picturesque bridge of Tschingelmatt, and rather more than 1 m. farther on returns to the l. bank. The vegetation becomes more alpine

in character; the summits of the Gelmerhörner are seen above the rt. bank of the valley, and the path ascends through a forest when a distant roar, gradually growing more distinct, announces the approach to the famous waterfall of the *Handeck*. This is certainly one of the finest in the Alps, and has the unusual privilege of never languishing for want of water. The Aar, after flowing rapidly for some distance through a narrow channel, suddenly springs over a rocky ledge, and descends, at a single bound of 200 ft., into a dark chasm whence clouds of spray ceaselessly rise, as if driven up by blasts from some subterranean cavern. There are two points of view which should not be missed. One of these is in front and some way below the fall, reached by a narrow path turning to the l. from the bridle-track; the other is from a wooden bridge thrown across the stream immediately over the fall. The effect here is most impressive, rather too powerful for the nerves of some visitors, who cannot bear to look down on the rushing flood at the moment when it leaps wildly into the void. The effect is heightened by the circumstance that another, but much more slender, torrent, called the Arlenbach, happens to join the Aar just at this point. Its clear waters spring from a lateral cleft into the abyss, and before reaching the bottom are mingled with the murky flow of the Aar, here laden with the fine mud of its parent glaciers.

Within a few hundred yards of the fall is a châlet inn (5,159′) of humble pretensions, except in its prices, where travellers usually halt to rest their horses, and to take refreshment. When the hospice at the Grimsel is overcrowded, which happens not unfrequently in summer, it is better to put up with the rough accommodation found here, but it is wise not to rely on the mere assurance of the innkeeper. [A pleasant excursion may be made to the *Gelmer See*, on the opposite, or E., side of the valley. 'It is reached in about 1 hr. by a steep path, occasionally aided by ladders fixed against the cliffs.'—[W. G. A.] Above the lake an alpine glen mounts to the N. amid glacier-clad summits. By this way it may be possible to reach the summit of the *Diechterhorn* (10,583′).] The head of the valley of Hasli from the Handeck to the Grimsel presents some of the wildest scenes that can be found at so moderate a height. The pines and Siberian fir gradually dwindle, and give place to a vegetation in which rhododendron and alpine willows predominate. The former presence of a great glacier filling up the valley to a great height is made manifest, even to the least observant traveller, by the smooth domes and bosses of granite, with rounded outlines, still preserving the furrows and scratches due to the passage of the glacier. The path ascends over some of these slopes, where the rock is so slippery that it has been necessary to hew steps in order to secure a footing for beasts of burden. The most remarkable of these is called *Helle Platte*, which has been corrupted into Höllen Platte. When covered with a thin coating of snow, as sometimes happens even in summer, care is required to avoid a dangerous slip. The track crosses and recrosses the Aar by rude bridges without parapets, and traverses a torrent descending from the *Bächli Glacier*, on the W. side of the main valley. But a single châlet—at the stony pasturage of Rätrichsboden—is passed on the way. At a point where the Aar makes an abrupt turn to the W. the stream is crossed for the last time, and a rather rapid but short ascent leads to the

Grimsel Hospice, originally established to receive poor travellers gratuitously, but now, to all practical intents, an inn. It had previously given cause for many complaints, but, the management having changed in 1864, is improved somewhat. The latest accounts are, however, unfavourable, and the rooms are close and small. The position is so favourable for many excursions that travellers put

up with slight discomfort sooner than seek lodging elsewhere.

Nothing can be more dreary than the position of this massive stone building, 6,129 ft. above the level of the sea, in the midst of a rugged amphitheatre of nearly bare rock. Two mountain tarns, whose dark waters reflect the bare rocks around, lie near the building.

Originally a religious foundation, the Hospice was maintained after the Reformation as a refuge for passing travellers. The landlord, who must derive a large income from the constant passage of travellers in summer, is bound to keep here one or two men during the winter, who provide food and lodging for the few persons who pass in that season. Weeks sometimes elapse without the appearance of a stranger, but in fine weather there is even in that season some traffic, which consists in the exchange of Oberland cheeses for wine and spirits from the Valais. The pass was held for some time by the Swiss and Austrian troops during the campaign of 1799, but the position was forced by the French under Gudin. Arriving from the valley of Hasli, they worked on the fears and the cupidity of a native of Guttannen, who was induced to lead a detachment by a steep and difficult track over the mountain called Nägelis Grätli, E. of the Hospice. When the position was simultaneously attacked in front, the appearance of an enemy in the rear decided the retreat of the Austrians. The present building is new, the former Hospice having been feloniously burned in 1852 by Zybach, long favourably known to travellers as an attentive and intelligent host. Though the site is seemingly well chosen, the building has several times suffered from avalanches. The climate of the Grimsel appears to be exceptionally severe. Rain and snow fall here more frequently than elsewhere throughout the summer, and the soil is constantly kept at a low temperature by the melting of snow and ice from the adjoining heights. It is probable that the position of the pass, nearly at the meeting of the valleys of the Rhone, Aar, Reuss, Ticino, and Tosa, and surrounded on every side by mountains, may account for its climatal peculiarities. Of the excursions to be made from this central point, the most interesting is that to the Unteraar Glacier. This is in many ways one of the most remarkable ice-streams of the Alps, and is at the same time one of the most easy of access. A moderately good walker, who desires to gain a near acquaintance with the upper region of the Alps, should go at least as far as the Abschwung, but will be well rewarded for his trouble if he should extend his excursion up the Finsteraar branch of the glacier towards the base of the Finsteraarhorn. (See Rte. K.) The Oberaar Glacier may also occupy a day. The ascent to the *Oberaarjoch* (Rte. O) is not difficult as compared with the descent on the S. side by the Viesch Glacier, and a moderate walker may easily go and return in the day. A guide should be taken for the glacier excursions. Melchior Schlappi, a servant at the Hospice, has acted as porter in several glacier expeditions, and is very well spoken of. He requires only experience to become an excellent guide.

The finest panoramic view in this neighbourhood is that from the *Sidelhorn* (9,449′), a projecting point in the range which here divides the cantons Berne and Valais. The summit may be reached in 3 hrs. from the Hospice, and a person well used to mountain walking will scarcely require a guide. The path leading to the Todten-see (see below) is followed for about 20 min. The ascent then lies up the slopes to the rt. The upper part of the ridge is rough. A first summit, called Klein Sidelhorn (9,075′), offers a view but little inferior to that from the highest point. This may be reached in little more than 2 hrs., and will save the less enterprising traveller nearly an hour's walk on very rough ground. The view is

deservedly celebrated. The peaks that surround the head of the valley of the Rhone are here fully seen, and the near mass of the Finsteraarhorn has few rivals for boldness and rugged grandeur. An active mountaineer may easily combine a visit to the Oberaar Glacier on the same day with the ascent of the Sidelhorn. Some unite both the glaciers along with the ascent in a single day's excursion, but this can be recommended only to those who do not care to see any of them thoroughly. The lower glacier is certainly more than enough for a full day's excursion. The return from the Sidelhorn to the Grimsel may be made by a mountain tarn called the Trübten See (7,772′), and by the N. slopes of the mountain. Those bound for Obergestelen may with a guide descend thither from the summit over very rough ground, without returning to the Hospice.

The *Löffelhorn* (10,138′) is a higher summit in the same range as the Sidelhorn, lying S. of the Oberaar Glacier, and immediately overlooking the Rhone valley. It is decidedly superior to the Sidelhorn in the view of the Oberland peaks, but is little visited, as it involves a laborious ascent of nearly 6,000 ft. from Münster (see below). It may probably be much more easily accessible from the N. side, starting from the Grimsel, but the Editor has not heard of the attempt having been made.

The ascent of the *Juchlistock* (8,633′), may be made in 2¼ hrs. from the Hospice. This is the E. extremity of the range forming the N. boundary of the Unteraar Glacier. The view is interesting; it commands the entire range on the E. side of the valley of Hasli, not well seen from any other point so easy of access. It also brings to light a considerable glacier district, whose existence might be scarcely suspected even by one well acquainted with the neighbouring ranges. S. of the Urbachthal is a high tract lying between the *Rizlihorn* (10,774′), and the *Hühnerthälistock* (10,607′), whence the *Aelpli* Glacier descends about due E., and the *Bächli* Glacier to SE., towards the base of the Juchlistock.

Another interesting expedition from the Grimsel is to cross the ridge called Nägelis Grätli, and so reach the middle plateau of the Rhone Glacier. There is an easier way which turns to the l. at the Todten-see, and lies along the Saasberg immediately above the Mayenwand. Those who have merely seen the Rhone Glacier from below can form no conception of its vast dimensions. (See § 25, Rte. F.)

The direct way from the Grimsel to Obergestelen—about 2 hrs.' walk or 2½ hrs. in mounting from the Valais—is not very interesting; and most travellers make the détour by the foot of the Rhone Glacier, involving but little loss of time, as the whole distance is easily traversed in 3 hrs. by an active pedestrian. The way being in part very rough, mules take from 3½ to 4 hrs.

The bridle-track mounts from the Hospice along the W. and S. side of the little lake, skirting the E. end of the Sidelhorn range, and in about 2 m. reaches a slight depression, locally called Hauseck, which marks the summit of the *Grimsel Pass*, 7,103 ft. above the sea. A marshy plateau with rare Carices, e. g. *C. microstyla*, *C. Laggeri*, &c., and a small dreary lake called the *Todten-see*, lie a few feet below the level of the pass. The ridge to the l. extending towards the Rhone Glacier is called the Saasberg. When the clouds lie low, or the ground is covered with snow, it is very easy to miss the way on this plateau; and as a general rule it is better for those who cross the pass, or make excursions hereabouts in doubtful weather, to take a guide. Many good mountaineers have been involved in serious difficulties within two or three miles of the Hospice.

The geologist will observe with interest the traces of glacial action that are not only apparent in the neighbourhood of the Hospice and on

the rocks surrounding the lakes, but even up to and above the summit of the pass, indicating by the direction of the furrows that the vast mass of ice that once filled the head of the valley of Hasli must have flowed over the Grimsel Pass towards the Valais. Neither will he fail to remark the contrast between the rough and jagged outlines of the upper ridges, that have never undergone the planing action of the glacier, with the condition of those parts that lay below the level of the ancient ice-streams. This may be very well seen in ascending the Sidelhorn or the Juchlistock.

On the NW. side of the Todten-see there is a choice between two paths. That passing W. of the lake leads to Obergestelen by a rough and uninteresting way, which keeps, with some deviations, a general direction about due S. It is also possible to descend to Oberwald, where the path joins the new road from Brieg. The track to the Rhone Glacier passes on the N. side of the lake, and soon reaches the brink of the steep descent overlooking the foot of the glacier. This slope is called *Mayenwand*, from the numerous alpine flowers that cover it in the spring and early summer, and afford a rich harvest to the botanist. The path has been improved, so that there is no danger in riding down, but it is so steep that ladies usually prefer to walk. 1½ hr. on foot, or about 2 hrs. with mules, suffice to reach the new inn built very near the foot of the Rhone Glacier. The old inn was a poor place; the new hotel opened by Seiler, who died in 1865, is well managed and will be found the best place for head-quarters in this neighbourhood. Save for the purpose of excursions to the Aar Glaciers, it should be preferred to the Grimsel, which is but a little more elevated, this being 5,752 ft. above the sea.

The *Rhone Glacier* is the finest example in the Alps of what may be called the *fan-shaped glacier*. Originating in a vast basin of névé on the W. side of the Galenstock, the ice-stream issues through a comparatively narrow portal, and is then left, free from the pressure of containing walls, to assume its natural form on the slope of the mountain. The result is, that it expands in a beautifully regular horse-shoe form, and the crevasses appear, like the sticks of a fan, to radiate from a centre. The lower part of the glacier may be traversed without much trouble, though the crevasses are sometimes rather wide. Travellers not accustomed to ice-work should on no account go without a guide. On the W. side, or rt. bank of the glacier, the regularity of its form is broken in one place by a fine waterfall, which bursts out from under the ice at a place where this breaks over a ledge of rock, and falls to a lower portion of the bed through an icy chasm at the base of the rock. There is a rough path along the W. bank, by which it is easy to approach the fall. The rough ground at the foot of the glacier, and the adjoining slopes, afford a rich harvest to the botanist. Among the rare plants found here may be noted *Achillea valesiaca*, *Carex bicolor*, *Kœleria hirsuta*, and many species of *Hieracium*. For further information as to the Rhone Glacier see § 25, Rte. F, and § 30, Rte. C. A diligence now plies daily in about 12 hrs. between Andermatt and Brieg. Places may also be secured at Hospenthal. The travellers going in either direction dine at Seiler's inn at the Rhine Glacier.

An active walker may easily reach Obergestelen in 1½ hr. from the inn at the foot of the glacier. The new road replaces the bridle-path along the rt. bank of the Rhone, here a mere glacier torrent, through a picturesque glen to *Oberwald* (4,426′), where there is a new inn (H. de la Furca). Chars may often be found here by those who wish to cross the Furca (§ 30, Rte. C), or to descend through the valley of the Rhone to Viesch or Brieg.

Here commences the characteristic scenery of the Upper Valais. A broad

nearly level trench lies between slopes of uniform height and inclination, usually clad with pine forest; and except in the neighbourhood of Viesch there is not much of variety to attract the traveller's attention. The valley is so straight that the pass of the Furca, which forms its natural termination to the ENE., remains almost always in sight, and in the opposite direction the beautiful peak of the Weisshorn is an object of constant interest. 2½ miles of level road lead from Oberwald to

Obergestelen (Inn: Cheval Blanc, good and reasonable), a small village, 4,393 ft. above the sea, at the meeting of several alpine paths. It was burned to the ground in 1868, and overwhelmed by an avalanche in 1720, when 84 lives were lost. At *Ulrichen*, 1½ m. lower down the valley, is the junction of the *Eginenthal*, through which lies the path leading to the passes of Gries and Nufenen; 3 m. farther on is

Münster (Inn: Goldenes Kreuz, very fair country inn; reasonable prices). The chief inducement to halt here is the excursion to the *Löffelhorn* (10,138′). a peak N. of the village in the range dividing the Oberaar Glacier from the Rhone valley. From the summit a ridge stretches down towards the Rhone dividing the *Münsterthal* from the Trützithal. The path mounts along the SW. slope of the latter glen. In about 3½ hrs. the traveller reaches a mountain tarn called *Trützi-see* (8,498′), one of the highest in the Alps; he passes this on the E. side, and then turning to the l. ascends nearly due W. over a small glacier to the highest peak formed of steep and shattered rocks mingled with snow. Fully 5 hrs., exclusive of halts, should be allowed for the ascent. The view is of the highest order. The Finsteraarhorn range is seen to great perfection, but it includes no glacier scenery that can compare with the view from the Aeggischhorn (Rte. D). Peter Bacher and Anton Guntern, of Münster, have been recommended as guides. Less than 2 m. below Münster is *Reckingen*, at the opening of the Blinnenthal, noticed in § 29. About 3½ m. farther, at *Niederwald* (small country inn), the valley narrows, and the scenery becomes more interesting. The botanist may here find *Nasturtium pyrenaicum*, and some other species characteristic of the Valais flora. Several picturesque hamlets — Bellwald on the rt., Mühlebach and Ærnen on the l., are seen as the traveller approaches the deep ravine called Viescher-tobel, through which the torrent from the Viesch Glacier descends to join the Rhone close to the village of

Viesch (Inn: Zum Vieschergletscher, small but good; H. des Alpes), 3,816 ft. above the sea; a place of resort owing to the attractions of the neighbouring Æggischhorn. (See next Rte.) Guides, mules, chars, and larger carriages may be hired here. Lorenz Kredig has been recommended as a voiturier. The charge for a char to the Rhone Glacier is 20 fr.; to Brieg, 10 fr., to Visp, 14 fr. A traveller, who has come so far with horses or mules from the Canton Berne, is liable to be deprived of them by the local regulations of the Valais authorities, ever dictated by a narrow and grasping spirit. (See the introduction to this chapter.)

After passing *Lax* (Inn: Kreuz, clean and good), the home of J. J. Bennen, a famous guide (whose loss by an avalanche in the ascent of an insignificant mountain in Feb. 1864, has been a matter of general regret), the even slope of the valley is broken by a rapid descent over a barrier of rock, while the Rhone forces its way through a deep and narrow ravine which it has excavated for itself, receiving at the same time the waters flowing from the Binnenthal (§ 29, Rte. C). The road crosses the Rhone and returns to the rt. bank nearly a mile lower down. A sensible change of climate, corresponding to the rapid descent, is felt before reaching Möril (Inn: H. Eggischhorn, tolerable), 2,690 ft. in height, or 1,126 ft. below Viesch. About 2 m. farther the road crosses

the *Massa*, as the short stream is called that carries the drainage of the Aletsch Glacier to join the Rhone. In proportion to the greatness of the ice-stream that supplies it, are the dimensions of this torrent, or rather river. Varying with accidental changes of season, this single stream usually exceeds in volume the Rhone to which it is here joined, although the latter is charged with the outflow from a dozen glaciers, besides the rainfall of a considerable valley.

The vegetation assumes a quite southern aspect, and the heat in summer is often oppressive. before the road reaches *Naters*, and then, crossing a long bridge over the Rhone, joins the main line of the Simplon road at *Brieg* (Inns: H. d'Angleterre; Poste; passing travellers may dine at a restaurant near the post). See § 21, Rte. A.

Route D.

VIESCH TO BRIEG, BY THE ÆGGISCHHORN AND BELL ALP—ASCENT OF THE FINSTERAARHORN, JUNGFRAU, ALETSCHHORN.

Of all European glaciers the greatest in its proportions, and that which best enables us to form a conception of the still vaster ice-streams that poured through the valleys of the Alps during the glacial period, is that of Aletsch. Originating in a vast basin of névé, about 6 m. in diameter, which is enclosed by ridges that scarcely anywhere fall below the height of 12,000 ft., and include most of the highest summits of the Oberland Alps, the *Aletsch Glacier* issues from this reservoir through the opening between the Faulberg and the base of the Dreieckhorn, and flows down with a majestic sweep, in a broad arc of singularly regular slope and dimensions. Measured along its axis from its head at the Jungfrau Joch, the ice-stream is from 15 to 16 m. in length, and for the greater part of its course $1\frac{1}{4}$ m. in width. When to these particulars we add the fact that it is easily accessible throughout the greater part of its surface, and that an unusual number of high peaks may be reached without extreme difficulty from its banks, it is obvious that there are here united inducements irresistible to the student of nature, and the lover of high mountain scenery. It is somewhat strange that in spite of such attractions this has been the last of the great glaciers of the Alps to excite the attention of travellers. The main cause was the absence of tolerable accommodation at a moderate distance from the glacier. The earlier explorers found no shelter save in the very poor châlets of the Märjelen Alp, where it was possible to pass a night, but which did not invite to a longer stay.

In 1856, an enterprising native of the Valais, named Wellig, opened an inn on the Æggischhorn which speedily became one of the favourite haunts of alpine travellers. More recently another inn, a worthy rival of the former, has been established on the Bell Alp, on the W. side of the glacier, and much nearer to its lower end. The traveller who wishes to become acquainted with the glacier region on the S. side of the Oberland Alps will not fail to visit both these stations, and if favoured by weather may well allow several days for his stay at each of them. Those descending the Valais from Obergestelen may forward luggage from Viesch to Brieg by diligence, and rejoin it at the latter place on their descent from the Bell Alp.

The hotel on the Æggischhorn is easily reached from Lax, or still more commonly from Viesch. Hire of a horse, 10 fr. The path mounts in zigzags the slope of the mountain W. of the village, passing for 1 hr. through pine forest. There is a rather shorter footpath, that joins the main track near the summit of the ascent. A very steep and slippery track marks the channel by which the herdsmen bring

down cheeses and other commodities from the higher pastures on little sledges much used for this purpose in the Valais. On clearing the pine-forest the path emerges on an alpine pasture, and then winds for more than an hour along the slope of the mountain, ascending gradually above the ravine through which the torrent from the Viesch Glacier descends towards the Rhone. The views are not very striking, but by diverging a little to the l. from the path, the grand peaks enclosing the valleys of Saas and Zermatt are seen in full perfection; the rival pyramids of the Dom and the Weisshorn being pre-eminent. An active pedestrian may arrive sooner than the mules, which require 2½ hrs. to reach the inn—Hôtel de la Jungfrau—where at 7,150 ft. above the sea the traveller finds a degree of comfort rarely to be enjoyed in similar situations. The house is fairly well built, and in fine weather warm by day, but of course some degree of cold is to be expected at night. M. Wellig is a good cook, the food is usually unexceptionable, the wines better than commonly found in Swiss inns, and the charges are reasonable. Some English books and newspapers help to pass the time in case of bad weather. While ordinary visitors have every reason to be satisfied with the host, those who undertake long and difficult excursions have had grounds for complaint. M. Wellig has in his employment several men who act as guides, not usually by any means first-rate in their calling. For their services he fixes an unreasonably high rate of payment, while he is said to place difficulties in the way of those who come provided with efficient guides, and decline the services of his *protégés*. It is well to fix a limit to the supply of provisions, and to settle the bill before starting. As he is a man to whom mountaineers are much indebted for his enterprise in establishing so good an inn in so desirable a situation, and as he in his turn is no less indebted to English alpine travellers who have given him their active support, it is much to be desired that a clear understanding between them should lead to reform in these respects. The position of the inn is not in itself very interesting. The only distant mountains in sight are the summits of the range at the head of the Binnenthal, dividing the Valais from the valley of the Tosa in Piedmont; though the great peaks round Zermatt may be seen from a point within 10 min. of the hotel. Its attractions lie in the fact that it has near at hand one of the very finest panoramic views in the Alps, and that it is the best starting-point for excursions on the Aletsch Glacier, and for the ascent of most of the higher peaks of the Oberland Alps.

The ascent of the *Æggischhorn* is the first and most indispensable excursion for all visitors. The clearest weather should when possible be selected, and those who remain some days will do well to make the ascent more than once, so as to compare the effect of early morning with that of the evening light. M. Wellig has done a good deal to facilitate the excursion, which at one time required some rough scrambling. The ascent may be made in 1¾ hr., being for more than half the way by a good path passable for mules. These are left at a hollow in the mountain covered with débris, whereon snow often lies even in the height of summer. When this has been crossed the remainder of the way is up the steep rocks that form the peak of the mountain. The highest point, 9,649 ft. above the sea, is formed of loose blocks of great size piled one on the other, as though a higher pinnacle had been shattered and had fallen in confusion. Although steps have been cut and rails placed at some points, the unpractised mountaineer should use caution, as it is easy to slip on the smooth surface of the rocks. The view unites more objects of interest, and is better fitted, in the writer's opinion, to give a lively conception of all the leading charac-

teristies of alpine seenery, than any other with which he is aequainted. The most impressive object is the Aletsch Glacier, descending from the NNW. with a nearly uniform slope 10 m. in length, from the snow saddle between the Jungfrau and the Mönch to the base of the mountain, just 2,000 ft. below. Beneath the spectator's feet the great ice-river bends gradually round to the SW. till it is lost to sight in the gorge of the Aletschwald. The giants of the Oberland group when seen from this side lose much of their accustomed effect, and the traveller who from the Wengern Alp has lately gazed up with awe at the precipices of the Jungfrau and the Mönch can scarcely recognise the same summits in the two flattened pyramids that rise scarcely 2,000 ft. on either side of the Jungfrau Joch. Far more striking is the Aletschhorn, whose conical peak is seen much nearer at hand, 6,000 ft. above the glacier which lies between its base and that of the Æggischhorn. Of the bold peak of the Finsteraarhorn the summit alone is visible above the range of the Vieschershörner. This is the range rising above the l. bank of the Aletsch Glacier, of which the Æggischhorn is properly a continuation; but between them, and immediately N. of the latter, is a deep hollow, cut down to a level somewhat lower than the surface of the glacier, and forming a flat trough about 2 m. in length, and 3 furlongs in breadth. It is evident that at an earlier period the Aletsch Glacier sent a branch through this depression to join the Viesch Glacier; but it is an error to assert, as some writers have done, that a branch of the former glacier does at the present time diverge into the hollow space left opposite this portion of its l. bank. As accurately represented on the Swiss Federal Map, the deviation is quite insensible. The reason is twofold. The depth of the hollow is insignificant when compared with the prodigious thickness of the glacier; Professor Ramsay, who made soundings for the purpose, nowhere found a depth amounting to 100 ft. The cohesion of glacier-ice is too great, or its plasticity too limited, to cause under the circumstances any rapid flow of the ice in the direction where the containing wall is partially removed. More than this, the hollow is partly filled by a lake, called *Märjelen See*, whose waters in summer are kept at a temperature slightly above the freezing point. As this lake washes the flank of the glacier, where it forms ice cliffs that rise some 60 ft. above its own level, it eats away the base of the cliffs, and large masses fall away into the lake forming miniature ice-bergs that float upon its surface. To prevent the lake from rising so high as to flood the pastures at its E. end, a trench has been cut by which the surplus waters are carried off towards the Viescher-tobel. On the other hand the opening of some subglacial fissure on the side of the Aletsch Glacier occasionally breaks open a passage through which the greater part of the lake is drained in a few hours, leaving the ice-bergs stranded on its shores. The mean height of the Märjelen See is 7,710 ft. It is an interesting object when seen from the summit of the Æggischhorn, but well deserves closer inspection.

The panorama seen from the Æggischhorn towards the E., S. and W. is full of interest. In the ENE. beyond the Furka Pass are some of the peaks of the Tödi chain in the Grisons. Turning round to the rt. the eye follows the long range that separates the valley of the Rhone from the Val Formazza, culminating towards the S. in the Wasenhorn and the Monte Leone. To these follow the magnificent peaks of the Monte Rosa group, unsurpassed for beauty and variety of form; while in the far west is seen the Grand Combin, and beyond it, above the ridge of the Gredetschhorn, the summit of Mont Blanc. Mountaineers bound for the Bell Alp or the lower part of the Aletsch Glacier may descend directly from the summit by the W. face of the

mountain; but as the slope is very steep, and covered with loose blocks that are easily set in motion, that course is not advisable for inexperienced climbers. It is also possible, after descending from the highest rocks, to cross the shoulder of the mountain overlooking the Märjelen See, and so combine the view from the summit with a visit to that curious lake, and an excursion on the Aletsch Glacier. The way is rather steep, and very rough towards the bottom. Those who prefer securer footing must make the détour by the Märjelen Alp.

In making the excursion from the Æggischhorn to the *Aletsch Glacier*, each traveller must be guided by his own taste and power of endurance, as well as by the state of the snow on the upper part of the glacier. A comparatively short excursion, e. g., crossing the glacier to the base of the Dreiecknorn, will give a measure of the grand scale on which it is formed, and will bring the stranger to the ice-world into contact with many new and striking phenomena; but an active walker, favoured by weather, and by the state of the snow, can employ a long day in no better way than by following the glacier up to its extreme limit at the snow ridge between the Jungfrau and the Mönch. Though the Märjelen See is the daily resort of visitors from the Jungfrau Hotel, there is no well-traced path. This is no serious inconvenience when starting fresh in the morning, but there are few mountaineers who have not had occasion to feel the difficulty of finding the way after night-fall, or, at all events, to desire a less troublesome operation than that of crossing a steep ridge on their return from a hard day's walk. The most direct course is to cross the shoulder of the Æggischhorn and descend, in about $1\frac{1}{4}$ hr. from the hotel, to the S. shore of the lake. Another way, rather longer, but easier, crosses the same shoulder farther E., where it is much lower, and after a slight descent reaches the Märjelen Hütten, a couple of chalets, where four or five men remain during the height of summer. They not only have to tend the cows that are pastured near the lake, but also have the care of sheep that are turned loose on the steep slopes above the l. bank of the Aletsch Glacier. A third way from the hotel to the lake is to make a circuit round the ridge above spoken of. The chalets being little more than 500 ft. above the hotel, this involves a slight ascent; but as the slope of the mountain is furrowed by many gullies, it is a troublesome course, and not often taken. For part of the way a watercourse may be followed along the steep E. slope of the mountain, commanding a fine view of the ice-fall of the Viesch Glacier.

There is a rough path along the N. side of the Märjelen See, much easier than the rugged slope on the opposite bank covered with loose fragments of rock. From either side of the lake there is little difficulty in gaining the surface of the *Aletsch Glacier*. As this is usually somewhat crevassed near the l. bank, it is best to steer for the middle of the ice-stream, where the crevasses are few and narrow, and where the traveller, being equally distant from the mountains on either hand, forms a truer estimate of the vast scale by which he should measure the surrounding objects. Nearly opposite to the Märjelen See, one of its principal affluents, called the *Aren*, or *Mittler Aletsch Glacier*, joins the main stream.

The bold summits that rise on the rt. bank, N. of the junction, are portions of a ridge diverging from the Aletschhorn. The nearest peak, a mass of nearly bare dark rock, is the *Olmenhorn* (10,853′), and the much higher partially snow-covered pinnacle to the NW. is the *Dreieckhorn* (12,540). On the opposite side is the range of the *Walliser Viescherhörner*, so called to distinguish them from the Grindelwalder Viescherhörner, a group of peaks lying in the range between the Finsteraarhorn and the Mönch (see Rte. I). The southern end of the range

immediately N. of the Märjelen See—about 10,000 ft. in height—is sometimes collectively called Strahlhörner, or Strahlgrat. Farther N. a summit called *Klein Wannehorn* (12,195′), rises out of the glacier that covers the upper part of the ridge. This is succeeded by other peaks, of which the highest, now called *Gross Wannehorn* (12,812′), was ascended in 1863 by M. M. G. Studer and Lindt. The NW. extremity is formed by a fine peak, lately known as *Schönbühlhorn* (12,697′). At the base of the latter mountain, about 4½ m. in a straight line from the Märjelen See, is the *Faulberg Cave*, frequently used as night-quarters by mountaineers attempting the ascent of the higher peaks. Keeping along the centre of the glacier the traveller, after passing the Faulberg, reaches a position which is in many respects unique in the Alps. From a central point in what has been happily called 'the Place de la Concorde of Nature,' at about 9,200 ft. above the sea, four snow valleys diverge at rt. angles—that leading NW. to the Jungfrau Joch, which may properly be called *Jungfrau Firn*, is naturally considered as the principal source of the Aletsch Glacier, being in the same line with the main channel by which the traveller has ascended. To the SW. an equally broad avenue of névé—the *Grosser Aletsch Firn*—ascends by a gentle slope to the Lötschen Lücke (Rte. H). In the opposite direction, or NE., the *Grünhorn Glacier* mounts by a rather shorter and steeper inclination to the Grünhorn Lücke, connecting the snow-basin of the Viesch Glacier with that of Aletsch.

The entire absence of any apparent breaks in the vast snow-fields, and the gentle inclination of the slopes, suggest no thought of danger, and it is difficult to persuade even experienced mountaineers that they should not be traversed without the rope. Yet the warnings already received have been more than sufficient to inculcate caution. Many a traveller or guide has slipped through the treacherous crust of snow that covers the concealed crevasses, and when not attached to the rope has owed his life rather to fortunate accident than to his own deserts. In one of the latest cases of the kind, a porter, who fell to a great depth, was released from his icy prison only after long and most arduous exertions, and was in such a condition that he would almost certainly have died during the night, had it not been for the unceasing attentions and judicious treatment of the English travellers who tended him in the Faulberg cave.

After passing the glacier cross-roads the traveller advances between the snow-covered ridges of the Kranzberg, an outlier from the Jungfrau on his left, and a snowy pyramid, with some sharp projecting ridges of rock, left unnamed on the Federal map, but generally known as the *Trugberg*, having received that name from the party who, with M. Agassiz, reached the summit of the Jungfrau in 1841, owing to the singular error of some of the guides who mistook this for the summit which they designed to reach. Although 12,904 ft. in height, it is overtopped by the adjoining range of the Viescherhörner, as well as by the Mönch and Jungfrau, and therefore does not offer much inducement to mountaineers. The writer has reached the southern and lower summit, and believes that the ascent to the northern peak presents no serious difficulty. S. of the Trugberg a glacier of considerable extent descends in a fine ice-fall to join the main stream of the Aletsch Gl., from the basin between the Trugberg and the Viescherhörner. It may best retain the name *Trugberg Glacier*, proposed by the writer in the first series of 'Peaks, Passes, and Glaciers.' Beyond this the ascent becomes rather more rapid, but not enough so to be laborious, except when fresh and soft snow lies over the névé. Passing along the base of the Trugberg, the traveller finally reaches the rather steep snow-slope leading up to the Jungfrau Joch. A crevasse, or bergschrund, sometimes intersects the névé, but it is

not found to oppose any serious obstacle; and the most inexperienced walker, with a competent guide, and attention to established precautions, may, in from 6 to 7 hrs. (exclusive of halts) from the Æggischhorn Hotel, attain the summit of the ridge connecting the Mönch with the Jungfrau. Those who first reached this point, and those who repeatedly scanned it from the Wengern Alp, were alike persuaded that, although the most obvious depression, or natural col, in the long range between the Finsteraarhorn and the Mittaghorn, it never could be made use of as a pass. The honour of overcoming the formidable obstacles by which it is defended on the N. side was reserved for some enterprising members of the Alpine Club. A notice of the ascent from the Wengern Alp will be found in Rte. I. The view is of the same character as that obtained from the summit of the Weiss Thor, or the Cima de Jazi (§ 20); but if the panorama of alpine peaks be less remarkable, the contrast between the vast snowy region that has been traversed in reaching the col, and the view of the low country suddenly unfolded from the summit, is even more striking. The spectator is here far nearer to the plain of Switzerland than he is to the low country of Lombardy when standing on the ridge N. of Monte Rosa, and from this vantage-ground he looks directly down upon the inhabited and frequented slopes of the northern valleys of the Oberland.

In the first published account of this excursion from the Æggischhorn ('Peaks, Passes, and Glaciers,' first series), Mr. E. Bunbury has given to it the names Col de la Jungfrau, or Mönch Sattel. The first appears inadmissible as the name of a pass lying in an exclusively German district; the second is in itself quite appropriate, but is liable to create confusion with the name Mönch Joch applied by general consent to the pass on the E. side of the Mönch described in Rte. I. It therefore appears proper to adopt the name *Jungfrau Joch*, proposed by Mr. L. Stephen, who has published the first account of the passage from the Wengern Alp, in the 3rd number of the 'Alpine Journal.' The height, as determined by Mr. Jacomb, who with a friend made the second passage, is 11,095 ft. Some rocks jut out from the névé a short way on the S. side of the col, and afford a convenient halting-place for the midday meal. For the return to the hotel at least 5 hrs., exclusive of halts, must be allowed. Inasmuch as 11 or 12 hrs.' steady walking are required for this interesting excursion, and that time must be extended in case the snow should be soft and deep during the ascent, the experienced mountaineer will understand the expediency of a very early start. Besides the rope, he will not fail to be provided with dark spectacles, or a gauze veil, as well as lip-salve or cold cream.

Those who have not had much previous acquaintance with glacier scenery may be recommended to make an excursion from the Æggischhorn Hotel to the *Viesch Glacier*. This presents the same contrasts to the Aletsch Glacier that a rapid mountain torrent does to a calm river. The lower portion especially descends in a very fine ice-cascade. (See Rte. O.) In making this excursion it is easy to descend to Viesch without returning to Æggischhorn. On the N. side of the Vieschertobel a well-defined ancient moraine extends down to the village, and has been partly cut through in the construction of the new road up the valley of the Rhone.

The most interesting excursion from the Æggischhorn for an enterprising mountaineer is the ascent of the *Finsteraarhorn* (14,026′), the highest peak of the Oberland Alps. Doubts have been raised as to the ascent by Hugi's guides, Leuthold and Währen, in 1829. The summit was certainly attained from the Oberaarjoch (Rte. O), in 1842, by M. Sulger of Basle, with Johann Jaun of Meyringen and

another guide. The next ascent was made in 1857 by several members of the University of Cambridge, and is recounted by the Rev. J. F. Hardy, in the first series of 'Peaks, Passes, and Glaciers.' The party slept at the Faulberg. That place has been much improved by M. Wellig, but it is inconveniently far from the object in view, and those who adopt it are liable to the inconvenience of having to pass a second night away from comfortable quarters. In the numerous ascents made within the last few years, some mountaineers have used a cave at the E. base of the Rothhorn (see Rte. O), which affords as good shelter as that of the Faulberg. Mr. F. W. Jacomb has pointed out a nearer site for a bivouac at the extreme W. slope of the Rothhorn, within 15 min. of the glacier flowing down from the Finsteraarhorn. A detached rock resting on a kind of keel from which its sides sloped upwards at an angle of 45° enabled the party, by building a low wall of loose stones, to secure tolerable shelter. But as this position is nearly 10,000 ft. in height, and lies in the very centre of a great snow-basin, an unusual amount of covering should be provided both for guides and travellers. The charge fixed by M. Wellig for guides from the Æggischhorn is 50 fr., and by comparison with other similar ascents this is not excessive. In starting from the Faulberg it is necessary to take a wide sweep round the W. base of the rocks, in order to avoid crevasses, before commencing the ascent of the glacier which flows between the topmost ridge of the Faulberg on the S. and the rocks called *Grüneck* (10,784′). In clear weather a party securely roped together may make this ascent before daylight, and in 2 or 3 hrs. from their sleeping-place, according to the state of the snow, may reach the summit of the *Grünhorn Lücke* (10,843′), a well-marked pass connecting the upper basin of the Aletsch Glacier with that of the Viesch Glacier, and forming a natural division between the Walliser Viescherhörner to the S., and a group of high peaks connecting these with the Grindelwald Viescherhörner. The Commission for revising the Swiss Federal Map has called this the Grünhorn Group. Its highest summit—*Gross Grünhorn* (13,278′)—is a bold rocky peak, and beyond it to the N. is a similar but lower point—*Klein Grünhorn* (12,884′). Nearer at hand, above the Grüneck is the *Grüneckhorn* (12,694′). Opposite to this range the Finsteraarhorn rises beyond the upper basin of the Viesch Glacier. The best known aspect of the peak, as it presents itself from the Faulhorn or from Berne, is that of an obelisk of rock so sharp that to attempt the ascent might seem sheer insanity. When seen towards the S.W., from the Aar Glacier, the outline is indeed less precipitous, but it is impossible from that side to gain the ridge by which alone the summit is to be reached. It is from the SW. side alone—that which lies opposite to the Grünhorn Lücke—that the peak offers any possibility of access. This face shows a number of projecting ridges of rock divided from each other by snow couloirs. Towards the top the rocks and couloirs are so steep that it seems impossible to reach the highest point directly from this side. The course taken is towards a point to the l. of the highest peak, whence it is possible to turn to the rt., and climb along the arête to the summit. A gentle descent across the hollow basin of névé leads in 1 hr. from the Grünhorn Lücke to the base of the rocks by which the ascent is commenced. These are extremely steep, but afford pretty good holding for feet and hands. For 2 hrs. the ascent is altogether by the rocks; above these are steep snow-slopes; the course inclines at first somewhat to l., then rather to the rt., and nearly 4 hrs. are consumed in reaching the ridge, from whence the traveller has an extraordinary view of the Aar Glacier, lying thousands of feet below him at the foot of

the precipices whose summit he has attained. Henceforward, the way lies along the extremely sharp arête, composed of projecting edges of rock with interstices filled by ice or hard snow. The ascent is longer, but not quite so difficult as the final arête of Monte Rosa, with which it is often compared, and nearly 2 hrs. are required to reach the highest point in the ridge, marked by a stone man, which occupies nearly all the narrow standing-ground. The view is remarkable, not only for its vast extent, but for the fact that within the range of distinct vision it is almost exclusively confined to bare rock, glacier, and snow field. Most of the principal peaks of the Alps allow the eye to descend into some inhabited valley, but here, in order to find traces of cultivation, it is necessary to look across the mountain tops to the farther end of the lake of Thun, where the tokens of man's presence become faint by distance.

It is needless to say that the descent requires caution and steadiness on the part of all concerned. On returning to the rocks it is difficult to recover the exact ledges and clefts by which the ascent was effected, and the ground is so steep that some delay may be caused by mistakes.* In some states of the snow it may be safe to make the descent by an ice-couloir, or miniature glacier, lying on the l. of the rocks which were used for the ascent.

In starting from the Faulberg it is necessary to allow from 9 to 10 hrs. for the ascent. If the travellers design to return to the Æggischhorn, it is rather shorter to descend from the base of the peak by the Viesch Glacier. As this is much crevassed, the better course is to take to the slopes of the Viescherhörner, opposite to the Rothhorn, and make a great part of the way along the rt. bank of the glacier.

The *Rothhorn* (11.644′) is a projecting peak SE. of the Finsteraarhorn, which shows a bold rocky front to those who view it in ascending the Viesch Glacier. It lies between the two main sources of that glacier—the great basin W. of the Finsteraarhorn, and the smaller reservoir below the Oberaarjoch. In one of his attempts to climb the higher peak, Hugi, approaching from the Oberaarjoch (Rte. O), crossed the ridge between the Rothhorn and Finsteraarhorn, afterwards descending to the upper névé of the Viesch Glacier. Mr. L. Stephen recommends this route to the Grimsel. Though rather more distant than the Æggischhorn the way is much easier, and the suggestion may lead future explorers to consider whether the former should not be preferred as the starting-point for this expedition.

More prominent than the Finsteraarhorn in the thoughts of Oberland tourists has ever been the *Jungfrau* (13,671′). The interest attaching to this mountain is mainly due to the fact that from the lake of Thun, and the greater part of the Canton Berne, it is the most conspicuous and the nearest of the Oberland peaks, while its extreme steepness when viewed from that side secured for it, as the name suggests, an early reputation for inaccessibility, which is in truth but ill deserved.

The first recorded ascent of the Jungfrau was accomplished in 1811 by J. R. and H. Meyer of Aarau with two Valais guides; the next in 1812 by another member of the same family, named Gottlieb Meyer, also with two men from the Valais. The reality of these ascents has been often called in question, but, in the writer's opinion, on insufficient grounds. The Rev. C. H. Pilkington, who made the ascent in 1862 by a course different from that usually taken, has from his own experience gone far towards explaining the supposed incompatibility of Meyer's

* When clambering alone in such situations, the writer has found it useful to carry a piece of chalk by which to mark the correct way in difficult places. If this plan be adopted by a party, the chalk should be in the hands of the guide who goes last in the ascent, in order that the marks may not be effaced.

narrative with the results of subsequent explorations. The third ascent dates from 1828, when several men from Grindelwald, headed by Peter Baumann, planted their flag upon the summit. Next came the ascent by MM. Agassiz, Forbes, Heath, Desor, and Duchatelier in 1841, recounted by M. Desor in his 'Excursions et Séjours dans les Glaciers,' and by Prof. Forbes in the appendix to his work on Norway. M. G. Studer has published an account of the next ascent made by himself and M. Bürki in 1842. Of late years the summit has been frequently attained, and as the ascent is shorter, though sometimes more difficult than that of the Finsteraarhorn it would become comparatively common if it were not for the excessive charge of 80 fr., now reduced to 70 fr., for each guide, and 40 fr. for porters, fixed by Wellig at the Æggischhorn. Local knowledge is so little required by those who make the ascent in fine weather—and none other is fit for such an expedition—that a party of mountaineers with first-rate guides may count with confidence on making the ascent without taking an Æggischhorn guide. It is, however, necessary to carry provisions and covering for the night to the Faulberg cave, and in most seasons a ladder is required to pass the Bergschrund at the base of the ascent, so that one or two porters are usually indispensable. As in all expeditions lying mainly over snow and ice, the time required depends mainly on the state of the surface. In 1862 a party of good mountaineers employed 17½ hrs. in the ascent from the Faulberg and the return to that station, while in the succeeding year a party, consisting of Prof. Tyndall, Rev. J. J. Hornby, and Mr. T. H. Philpott, accomplished the same distance in the extraordinarily short space of 10½ hrs.

The principal buttress projecting on the SE. side of the Jungfrau towards the Aletsch Glacier, but presenting no well-defined summit, has been called the Kranzberg. After mounting the gentle slope of the glacier for about 2 hrs. from the Faulberg, the ascent is usually commenced by a spur of the Kranzberg. When this has been surmounted, the traveller gains a view of the Roththalsattel, a depression in the ridge running S. from the highest peak of the mountain. The condition of the slope leading up to this point appears to vary in a remarkable manner according to the season and the amount of snow that has fallen in the preceding winter. While some experienced mountaineers have found it decidedly difficult, others have encountered no obstacle worth notice. Sometimes one considerable bergschrund traverses the steep snow-slope a few hundred feet below the Sattel, sometimes a second opens lower down; but in some exceptional seasons both are completely bridged over, and occasion no trouble to the attacking party. As a general rule, a ladder of some 25 ft. is indispensable. In the ascent by Mr. Pilkington, already referred to, the party being unprovided with a ladder, and having reason to apprehend serious difficulties in the ascent from the Roththalsattel, bore to the rt., and climbing by extremely steep rocks, and by slopes of hard ice in which the work of step-cutting was very laborious, reached the highest peak from its E. side, instead of from the S. as in all the other recent ascents. This course is, however, extremely laborious, costing 5½ hours of hard work from the point where they left the ordinary route, supposed to be 1,400 ft. below the summit. The usual course is to reach the *Roththalsattel* (12,946′) in about 5 hrs. from the Faulberg. The effect of suddenly arriving on this extremely sharp crest of snow, beyond which the eye plunges abruptly down a precipice 3,000 ft. in height into the depths of the Roththal (Rte. H), is strikingly impressive, and it is scarcely possible to believe that the ascent can be made from that side (See Rte. H). The remainder of the ascent is accomplished along one of the longest and sharpest arêtes of frozen snow to be found in the Alps. With perfect steadiness and

first-rate guides there is no danger, unless too early in the season, or soon after a heavy fall of fresh snow. When it is necessary to cut steps all the way in hard frozen névé, the work is very laborious, and 3 hrs. may be consumed in mounting the 725 ft. that separate the Sattel from the summit. Some rocks jut out close to the top, but the actual peak consists of a nearly level ridge of frozen snow falling away on either side like a house-top with an excessively steep roof. The view is wonderful, on the one side commanding the icy wastes of the Aletsch Glacier, and the highest alpine peaks far and near; on the other overlooking populous valleys that lie at a depth of 2 miles below the spectator's feet.

In going from the Æggischhorn Hotel to that on the Bell Alp, travellers have a choice between several interesting ways. The best for pedestrians is by the Märjelen See, descending the Aletsch Glacier to a point below the junction of the Ober Aletsch Glacier, a comparatively narrow and rapid ice-stream flowing from the S. side of the Aletschhorn. In 1½ hr. from the Märjelen See the traveller reaches the point where he leaves the glacier on its rt. bank, and ascends in about 1 hr. by a rather steep, but well-made path, to the new hotel.

It is possible to descend direct from the summit of the Æggischhorn so as to reach the glacier about ½ m. below the Märjelen See, and thus enjoy the view from the top on the way from the one hotel to the other.

A third way lies along the S. side of the ridge of the Æggischhorn. It is convenient for ladies, because horses can go to, and sometimes across, the glacier, and the views of the Valais Alps are in clear weather magnificent. A frequented track over alpine pastures at a height of rather more than 7,000 ft., passes by a nice and comfortable little inn on the *Rieder Alp*. Near this a track from the good inn at Lax, after mounting through forest, joins the path. A short ascent leads thence to a depression in the ridge enclosing the Aletsch Glacier on the SE. side. A rough descent to the edge of the glacier lies over the steep slope of the Aletsch Wald, probably once covered with pine forest, but where, at least in its upper part, only a few straggling trees now hold their ground.

On the opposite side of the glacier the path above mentioned is found to lead in 5 hrs. from the Æggischhorn to the hotel on the *Bell Alp*, opened in 1860, and lately much enlarged and improved by the addition of a solid stone building. It is now a frequented haunt of mountaineers, and deserves their favour by good accommodation and reasonable charges, making it a worthy rival to Wellig's inn. This stands about 7,130 ft. above the sea, on a ridge overlooking the lower stream of the Aletsch Glacier, and its junction with the Ober Aletsch Glacier, whose fine ice-fall is in full view. The windows command a noble view of the snowy peaks from the Monte Leone to the Weisshorn. In this respect it has the advantage of the Hôtel de la Jungfrau, but it is not so conveniently placed for the excursions above described, nor for the passes noticed in Rtes. H, I, and O. Several days may, however, be spent here with advantage, and at least one first-rate peak may be attained in a single day.

The finest point of view of easy access is the *Sparrenhorn* (9,889′). The top is easily reached in 2 hrs. from the hotel. The view of the Monte Rosa group is perhaps superior to that from the Æggischhorn, but only a comparatively small portion of the great Aletsch Glacier is here in sight. On the other hand the comparatively trifling *Ober Aletsch Glacier*, which descends close under the precipitous E. face of the Sparrenhorn, is a very striking object. The last-named glacier is the outflow of the *Beich Firn*, wrongly named on the Federal Map *Jagi Glacier*, a vast basin of névé extending from the Aletschhorn to the Gross Nesthorn. It is divided into two main branches

—one extending northward between the Aletschhorn and the *Schienhorn* (12,638′), the other westward, between the latter and the *Gross Nesthorn* (12,533′). From the junction of these branches the Ober Aletsch Glacier flows to SE., at first with a gentle slope, between the Sparrenhorn and the Fusshörner, until on approaching the main glacier it plunges down the slope in a grand ice-fall. To reach the junction of the Beich Firn with the Ober Aletsch Gl. is an easy and delightful excursion of 2½ hrs., and is within the powers of many ladies. There is perhaps no other spot equally easy of access where the traveller in the ice-region of the Alps is so completely cut off from the outer world.

The *Gross Nesthorn* was first ascended from the Bell Alp in 1865 by Messrs. H. B. George and Mortimer, with Christian Almer and his son. Passing the base of the peak nearly to the head of the W. branch of the Beich Firn, they had on their l. a steep ice-slope, broken in five places by protruding masses of rock. Ascending the steep channel between the two masses nearest the Nesthorn they reached the ridge overlooking the Grcdetschthal, turned to the l., and crossing a minor peak, and attained the summit in 6½ hrs., exclusive of halts. The view is of the very first order, perhaps surpassing that from the Aletschhorn.

An extremely interesting excursion from the Bell Alp is that to the savage gorge of the Massa, where the Aletsch Glacier rather abruptly terminates in a narrow ravine between extremely steep rocks. These are not passable on either side of the glacier, but it is possible to descend along the moraine on the l. bank between the ice and the base of the cliffs. A short way below the end of the glacier is a wooden bridge over the stream of the Massa, and a path mounts thence to a group of châlets above the village of Blatten traversed by the bridle-track leading from Brieg to the hotel.

The ascent of the Aletschhorn was first effected in June 1860 by Mr. F. F. Tuckett, with Victor Tairraz, J. J. Bennen, and P. Bohren, as guides. The party passed the night in some holes in the rocks above the Aren or Mittler Aletsch Glacier, and on the following morning reached the snow arête connecting the Dreieckhorn with the main peak. The passage along this arête at so early a period in the year, before the snow has become well consolidated, involved some risk. The final peak is on this side a slope of névé lying at an angle of 50°, requiring care and good step-cutting, but involving no serious difficulty.

The *Aletschhorn* (13,803′), the second in height of the Oberland Alps, is the only one of the higher peaks which lies altogether in the Valais, being the culminating point of a range running parallel with the dividing ridge, and surpassing it in the height of its principal peaks. Standing thus between the principal range of the Bernese Alps and the Pennine chain, it shares with the Bietschhorn the advantage of occupying the most central position held by any of the higher peaks of the Alps. Surpassing its rival by more than 800 ft., it is often thought to command the finest of all the panoramic views from Alpine summits. To the SW. the view extends to the Pelvoux group in Dauphiné, distant 135 m. To the E. the panorama extends, according to Mr. Tuckett, to the Grisons and Tyrol Alps, but he has not specified the most distant point within the range of vision on that side. To the NW. the eye ranges across the snowy summits at the head of the valley of Lauterbrunnen to the plain of Switzerland and the distant Jura. On the S. side alone the view is bounded by the Pennine chain, which bars the prospect towards Italy. The ascent from the Bell Alp by the N. branch of the Beich Firn is shorter and easier than the way above indicated. Active climbers have reached the top in little more than 6 hrs. actual walking. It is well to start at 1 A.M.

For the Birchfluh Pass, see Rte. G.

The descent from the Bell Alp Inn to Brieg by the bridle-path takes 3 hrs. ½ hr. is saved by going straight down the slopes to near *Blatten*, whence the track leads to Naters, close to Brieg; 3½ to 4 hrs. are required for the ascent. The charge for a horse from Brieg is 10 fr., with 2 fr. to the boy who leads it—for a porter 5 fr.

Route E.

INTERLAKEN TO KANDERSTEG.

In the preceding Rtes. the chief paths by which ordinary travellers approach the higher peaks of the Oberland Alps on the NE. and S. sides have been described. To complete the circuit on the W. side, most tourists choose the Gemmi Pass (§ 23, Rte. A), which is interesting in itself, and at the same time free from difficulty. In the present and the following Rte. some of the paths by which a pedestrian may approach the Gemmi from Interlaken or Lauterbrunnen are noticed, while in the succeeding seven Rtes. the various passes that traverse the great glaciers, and divide the main peaks, are more or less fully described.

A traveller going from Interlaken to the Gemmi has the choice of several routes.

1. *By Carriage road.* 7¾ Stunden, or 23¼ Eng. miles.

About 6 m. from Interlaken, near the Baths of *Leissingen*, a road turns to the l. from the main road leading to Thun, and mounts the slopes above the lake for a distance of nearly 4 m. to

Æschi (Inn: Bär), a village more than 1,000 ft. above the L. of Thun, commanding a noble view. The church is said to be of the 10th century. A slight descent leads in 1½ m. to the road from Thun to Kandersteg, which is reached near the village of Mühlenen. For the road from thence to Frutigen and Kandersteg, see § 23, Rte. A.

2. *By the Saxetenthal.* 7 hrs. on foot or mule-back to Mühlenen; 12 m. by road thence to Kandersteg.

The *Saxetenthal* is a very picturesque glen, which separates the outer range of mountains rising above the L. of Thun, whose chief summits are the Morgenberg and Abendberg, from the higher range culminating in the Sulegg (7,910′), Schwalmeren (8,981′), and Dreispitz (8,305′). The torrent issuing from the Saxetenthal intersects the road from Interlaken to Lauterbrunnen a short way beyond the base of the Klein Rugen. A path mounts along the rt. bank, and in 2 hrs. reaches the village of *Saxeten*. It stands in a picturesque situation, much exposed to damage from avalanches. This is the best starting-point for the ascent of the *Sulegg* (7,910′), sometimes visited from Interlaken for the sake of its grand view of the Jungfrau. Though of moderate height, it is rather difficult of access, save for practised mountaineers; a guide should be taken from the village. The ascent is by the Bellenhöchst Alp. It is necessary to make a wide circuit in order to reach the eastern ridge of the mountain. The upper part is an arête of rock so extremely narrow that a man may sit astride upon the ridge. Those who are bound for Lauterbrunnen may descend from the base of the Sulegg to the village of Isenfluh (Rte. B).

The way from Saxeten to the Kanderthal mounts in the midst of picturesque scenery to the *Renggli Pass* (5,774′), reached in 4 hrs. from Interlaken. This divides the Saxetenthal from the Suldthal, which joins the Kander near Mühlenen. The descent is an agreeable walk of 3 hrs. through pleasing scenery. A pedestrian, who has made the Renggli the object of a day's walk from Interlaken, may turn to the N. from the summit of the pass, and reach Leissigen on the L. of Thun by the ridge of the Morgenberg.

3. *By the Sausgrat.* 9¼ hrs.' walking to Reichenbach; 11 m. by road to Kandersteg.

This rough and steep way is very

little used, and further information is desired. It may be taken as well or better from Lauterbrunnen, whence the distance is less by ¾ hr. than from Interlaken. Less than 1 m. beyond *Zweilütschinen* (Rte. B) the path to *Isenfluh* mounts through the woods on the l. bank of the Sausbach. Nearly 1½ hr. higher up are the châlets of Matten. Up to this point it is possible to ride, but mules cannot well be taken farther. The head of the Sausthal is a wild hollow, enclosed between the Sehwarz Grat (9,167′), Schilthorn (9,728′), and Kilchfluh (9,285′) on the S., and the Schwalmeren (8,981′) on the N. side. The *Sausgrat Pass*, lying between the two last-named peaks, is called by M. Joanne Col de la Kilchfluh, and he has attributed to it the height of but 5,124 ft. The writer is not certain that the figures, 2,453, in the Federal map—eorresponding to 8,048 Eng. ft.—refer to the lowest point in the ridge; but the pass, which is visible from the Faulhorn, cannot fall much below that height. The deseent towards the Kanderthal lies through a braneh of the Kien Thal (§ 23, Rte. B), ealled *Spiggengrund*. After reaching the ehâlets of Hohkien (6,747′), a beaten track leads down that glen. After a eireuit on the rt. bank the path erosses the stream, but returns to the N. side before approaching *Kienthal*, the chief village of the valley bearing the same name, standing at the junction of the main branch, described in § 23, Rte B. with the Spiggengrund. Not less than 6 hrs., exclusive of halts, should be allowed for the pass from Isenfluh to Kienthal.

Route F.

LAUTERBRUNNEN TO KANDERSTEG.

The upper part of the valley of Lauterbrunnen displays alpine scenes of the highest order, and is deservedly visited even by those who do not attempt the somewhat difficult glacier passes leading either to Kandersteg or to the Lötschenthal; but the exeursion may be eonveniently eombined with the pass to Kandersteg by the Tsehingel Glacier. A somewhat fatiguing way, but free from all risk or diffieulty, is by the Sefinen Furke and the Dündengrat, most eonveniently made from Mürren (Rte. B). Though it is possible to reach Kandersteg in one day from Lauterbrunnen by either route, it is a better plan to sleep at Mürren, if the course selected be by the Sefinen Furke, or at the Steinberg Alp, if the way by the Tschingel Glaeier be preferred, thus leaving time to enjoy fully the beautiful scenery.

1. *By the Sefinen Furke.* 13 hrs.' walking from Lauterbrunnen by Mürren, or by Stechelberg.

In taking this pass from Mürren there is the great advantage of diminishing the ascent by at least 2,700 ft., no slight advantage when it is recollected that to reach Kandersteg it is necessary to traverse a second pass—the Dündengrat—not less steep and laborious than the first. A good guide is indispensable, as in so long an expedition mere loss of time in seeking the way would expose the traveller to the ineonvenience of being benighted.

On leaving Mürren a track is followed SW. to the Gümelen Alp immediately overlooking the Schiltthal, and a little above the junction of that wild glen with the Sefinenthal. After crossing the Schilt-Bach, and a steep ascent round the base of a buttress of the Schilthorn, the path bears nearly due W. to the Oberberg Alp, where a group of châlets overlooks the deep and savage ravine of the Sefinenthal, beyond which the rocks of the Gspaltenhorn (11,260′) rise very grandly. Mounting gently to the W. from the Oberberg Alp, the traveller reaches the very extensive pastures of the *Boganggen Alp* (6,663′), where cheeses of superior quality are made in several ehâlets. To the S. is a remarkable rock called Hörnli (8,032′). The ascent now becomes

much more rapid, though not difficult. A faintly-traced path mounts along a stream flowing from SW., and a small lake is passed on the l. hand. Towards the summit it is usually possible to choose between slopes of débris and a large patch of névé—the first being preferable for the ascent, the second for the descent. In about 3¼ hrs. from Mürren the traveller reaches the crest of the *Sefinen Furke* (8,566′), also known in the valley of Lauterbrunnen as Klein Furke, a well-marked depression in the ridge connecting the Hundshorn (9,607′) with the Büttlassen (10,463′). The former summit is connected with the Schilthorn, the latter is a northern buttress of the Gspaltenhorn; and between the two last-named summits the great range of the Oberland peaks, culminating in the Jungfrau, forms a grand picture. In the opposite direction the Blümlis Alp, much nearer at hand, shows its many-peaked ridge.

The traveller who would reach the Sefinen Furke direct from Lauterbrunnen will do well to engage a char as far as Stechelberg, 1½ hr., and to start considerably before daylight, so as to accomplish a good portion of the ascent before the sun has acquired power. The ascent by the N. side of the Sefinenthal is long, steep, and fatiguing, but the scenery is very striking. The valley forms, for nearly its entire length, one of the steepest and most impassable defiles in the Alps. More than 4 hrs., exclusive of halts, are required to reach the summit of the pass from Stechelberg.

The descent from the Furke towards the Kienthal is steep enough to require some caution. It lies at first over shattered slate rocks, then by a slippery slope of shale, troublesome to mount, and demanding care in the descent. Snow sometimes lies on the declivity before the highest pastures are reached. Thenceforward the way is easy to the Dürrenberg Alp, where in case of need shelter may be had for the night. This is reached in little more than 1 hr. from the pass, but those travelling in the opposite direction must allow 2 hrs. for the ascent. From the Alp the guides often descend along the torrent which joins the main branch of the Kien Thal, below the châlets of the Bund Alp. Though the path is easier, this involves a considerable détour, and adds at least 1 hr. to the day's walk. There is no great difficulty (with the help of a local guide) in shortening the way by traversing the ridge which divides the two branches of the valley. Bearing somewhat S. of W. from the Dürrenberg Alp until he finds himself above the gorge through which the torrent flows from the Gamchi Glacier, the traveller should then turn SE. above the precipitous slopes until, in less than 1 hr. from the châlet, he reaches a point where it is easy to descend to the torrent, a short distance below its exit from the glacier. A steep ascent of about two hrs., or rather more than 7 hrs. from Mürren, then suffices to reach the Dündengrat (§ 23, Rte. B), whence Kandersteg may be reached in little more than 3 hrs.

For a practised mountaineer it is still better to bear to the l. from the Furke, winding along the slopes of the Büttlassen nearly at a level, until a very rapid descent leads to the *Gamchi Glacier*. He should then cross this glacier much above its foot, and afterwards steer for the Dündengrat. It is possible to ascend the glacier to the *Gamchilücke*, and so join the next rte. over the Tschingel Glacier.

2. *By the Tschingel Pass.* 12½ hrs, exclusive of halts.

This route presents a series of grand and striking pictures such as are rarely united in a single excursion. Although practicable in one day, it is better to sleep on the way at Trachsellauenen, or at the Steinberg Alp. The latter may be reached in 3 hrs., but an entire day may be well spent in exploring the upper part of the valley of Lauterbrunnen. From the village of Lauterbrunnen a good char-road is carried for about 3 m. up the valley. Besides the Staubbach, many other streams are

seen to spring over the nearly vertical walls of limestone that rise on either hand. Crossing the Lütschine about 1½ m. from the village, the road traverses the torrent from the Trümmletenthal, which bears down the drainage from the glaciers lying on the N. face of the Jungfrau. A steep and giddy path leads to the Wengern Alp along the N. side of the ravine. The ascent through the main valley is very gentle as far as *Stechelberg*, where the char-road comes to an end. To the rt. is the opening of the Sefinenthal and the path leading to the Sefinen Furke. The traveller follows the bridle track on the rt. bank of the Lütschine as far as the hamlet of *Sichellauinen* (3,265′), where he returns to the W. side of the torrent. High up on the opposite bank are seen the pastures of the Stufenstein Alp, and the opening of the wild glacier basin of the Roththal, lying close under the S. face of the Jungfrau (Rte. II).

The last hamlet in the valley is *Trachsellauenen* (4,144′), 2½ hrs. from Lauterbrunnen, with a rough but clean alpine inn. Here the deep trenches excavated by the glacier torrents, whose union forms the Weisse Lütschine, divide the valley into many different branches. The stream from the Tschingel Glacier flows from the SW.; to the l. another torrent descends from the small lake called Oberhorn See, fed by the *Breithorn Glacier*, formed by the union of many smaller ice streams on the northern escarpment of the range between the Tschingelhorn and the Gros-horn. In the lower part of its course the last-named glacier joins the *Schmadri Glacier*, issuing from a hollow between the Grosshorn and the Mittaghorn. Farther to the l. or E. of S., a smaller ice stream, the *Breitlauenen Glacier*, descends between the Mittaghorn and the Ebnefluh.

The way to the Steinberg Alp lies up the steep declivity above the l. bank of the stream from the Tschingel Glacier; but those who are not pressed for time will do well to visit the fine falls of the *Schmadribach*, thus lengthening the way by about 2 hrs. The path leading to the falls turns aside at the Ammerten Alp, crosses in succession two considerable torrents, and mounts at first SE., and then S, till it reaches a small hut just opposite to the principal fall. Almost immediately after escaping from the Schmadri Glacier the torrent springs over a ledge of rock fully 200 ft in height, and lower down in the ravine which it has channelled on the slope of the mountain, forms two more fine falls before it joins the torrent from the Oberhorn See. The cascade is in itself very fine, and the effect is heightened by the grandeur of the surrounding scenery, and the noble background of ice-bound precipices that rise above it. The excursion is often made from Lauterbrunnen, 4 hrs. sufficing to reach the fall, and 3 hrs. for the return. To enjoy the view of the cascade in full perfection, it is well to clamber up a steep slope, where some scattered pines still cling to the rocks above the hut to which visitors are generally conducted. In going from the Schmadribach to the Steinberg Alp, it is possible to make a détour by the *Oberhorn See* (6,811′), lying on a high plateau on the W. side of the Breithorn Glacier, immediately opposite the Tschingeltritt. There is a very small herdsman's hut or châlet near the little lake, which is inhabited in the height of summer, and where very rough quarters may be had for the night; but there is better accommodation lower down on the opposite side of the Tschingel Glacier at the

Steinberg Alp (5,794′), which may be reached in little more than 1 hr. from Trachsellauenen, or 3½ hrs from Lauterbrunnen, by those who do not make the détour to the Schmadribach. The site is well worth a visit even for those who do not attempt the passage of the Tschingel Glacier. It may be combined with the excursion to the Schmadribach by those who return on the same day to Lauterbrunnen.

The reader will find in M. G.

Studer's *Topographische Mittheilungen aus dem Alpengebirge* a full discussion as to the names of the peaks seen from hence, and here briefly enumerated. Commencing on the N. side with the rt. bank of the Lütschine, we have first the craggy peak of the Schwarz Möneh (8,675′), succeeded by the snowy summit of the Silberhorn (12,106′). The Jungfrau (13,671′) here shows an unaccustomed aspect; the crags of its W face, and those rising on the N. side of the Roththal, being so steep that the snow can scarcely cling to them. The highest summit of the *Gletscherhorn* (13,064′) —first ascended in 1867 by Mr. Horn by and Christian Lauener from the S. side— lies due S. of the Jungfrau, and is almost concealed by the *Ebneflüh* (13,005′). This forms a portion of the same ridge, and is separated by a slight depression from the *Mittaghorn* (12,761′) below which is seen the precipitous ridge of the Schmadrirücke, dividing the Breitlauenen from the Schmadri Glacier. Behind the latter rises the *Grosshorn* (12,346′), followed by the bolder and better defined peak of the *Breithorn* (12,382′). West from the latter is the *Wetterlücke*, a well-marked col, over which lies a long disused, but lately refound pass to the Lötschenthal. See Rte. H. Mr. G. Studer has found a record of the passage being effected in 1783 by four miners from Trachsellauenen. He attributes its abandonment to the great extension of the Breithorn Glacier. [The Breithorn was ascended from the Wetterlücke in 1865 by Mr. E. von Fellenberg, with four guides, mounting the W. arête. They were followed, 5 min. later, by Messrs. Hornby and Philpott, who had made the détour from the Steinberg by the Petersgrat and S. side of the Tschingelhorn.]

E. of the Wetterlücke is the *Tschingelhorn* (11,746′), the last prominent peak in this portion of the main range. Below this, and a little to the rt. as seen from the Steinberg Alp, an isolated rocky summit called the Wetterhorn (10,312′) partly, but not completely, divides the ice-streams of the Tschingel and Breithorn Glaciers. At the NE. base of the Wetterhorn the two glaciers meet, and it is apparent that a part of the outflow of the Breithorn Gl. is diverted to the S. so as to join the lower end of the Tschingel Gl. Immediately NW. of the Steinberg Alp rises the very steep ridge extending from the Gspaltenhorn (11,260′) to the *Spitzhorn* (7,224′). This extremely sharp pinnacle, which forms the NE. extremity of the range of the Blümlis Alp, was attained by Mr. G. Studer with considerable difficulty, and not without the assistance of his guides.

To understand the character of the expedition from the Steinberg Alp to the Gasterenthal, a few explanatory topographical remarks may be serviceable. It was observed in § 23 that the range of the Blümlis Alp, extending from the Doldenhorn to the Spitzhorn, constitutes a secondary ridge parallel to that forming the watershed between the Cantons Berne and Valais. The two ranges are so close together that the air-line drawn between the opposite summits rarely exceeds $2\frac{1}{2}$ m. Towards the centre of the trough that lies between them is a plateau exceeding 9,000 ft. in height, broken through at the centre by a projecting rock called *Mutthorn* (9,957′). The ridge commonly called Petersgrat, limiting the plateau on the S. side and extending 5 m. from the Tschingelhorn to the Sackhorn, rises by gentle slopes of névé to the height of about 1,500 ft above the plateau. There is probably no other example in the Alps of a high mountain ridge without a sensible break or inequality. Whatever asperities may exist in the rocky skeleton are filled up by névé, and the surface seen along the ridge maintains a dead-level which nowhere sinks or rises more than a few feet. From the great snow reservoir lying in the centre of the trough, considerable glaciers descend on either side. It is unfortunate that the authors of the

Federal Map should have applied to the whole glacier region including the ice-streams descending in opposite directions the two-fold name 'Tschingel oder Kander Gletscher.' The convenience of restricting the first name to the glacier descending into the valley of Lauterbrunnen, and the second to that which feeds the principal source of the Kander in the Gasterenthal, is so obvious, that we shall not hesitate so to apply the names in this work.

The *Tschingel Glacier*, fed by the névé of the central plateau, and in part from the slopes of the Petersgrat, descends on either side of the Mutthorn between the Gspaltenhorn and the Wetterhorn, maintaining for some distance a NE. direction and a moderate slope until it encounters a projecting buttress of rock, precipitous on its E. face – the well-known Tschingeltritt. Forced aside from its direct path, the glacier turns due E and flows down through a narrow and steep channel on the N side of the Wetterhorn in an impassable ice-cascade At the base of the fall it encounters a lesser ice-stream descending from the E. side of the Wetterhorn, and is bent abruptly at a right angle into the nearly level channel through which the lower end of the glacier extends northward into the head of the valley of Lauterbrunnen about $\frac{3}{4}$ m. This lower extremity of the glacier is easy of access from the Steinberg Alp, but to attain the upper and gentler slope above the ice-fall is a matter of some apparent difficulty. The rocks of the Tschingeltritt are formidably steep, and the only point where it seems practicable to attack them is at the end nearest the base of the ice-fall. Close at hand is a spot where fragments of ice from above are detached during the warmer hours of the day, and the shattered fragments roll some distance over the surface of the glacier. It does not appear that these often reach the place which must be crossed in order to reach the base of the Tschingeltritt, but those who pass during the daytime will do well to get away as soon as possible from the neighbourhood of these unpleasant visitors The lower part of the *Tschingeltritt*, reached in one hr. from the Steinberg Alp, consists of a rather slippery slope of shattered slate, above which rises a much steeper wall of rock, the lower part of which is almost precipitous It consists, however, of solid flags giving good and secure hold for feet and hands. The steepest portion is usually mounted with the help of a pine trunk, set with rough cross-bar sticks for the feet; but even when this is absent, as happens when it has been carried away by the spring avalanches, a practised cragsman will find no particular difficulty in the ascent. The less experienced will receive an almost superfluous amount of assistance from the guides, who exaggerate the difficulty of this part of the route, while they constantly neglect the really important precaution of attaching the party together with the rope on the upper part of the glacier. For some distance the rocks continue to be very steep, and those who descend this way towards Lauterbrunnen require care and steady heads. As the slope becomes gentler the course followed approaches the l. bank of the glacier, where many alpine flowers bloom on the verge of the great snow-fields. In about 2 hrs. from the Steinberg Alp the traveller reaches the point where it is usual to take to the ice, which is not unfrequently coated with fresh snow. When this is the case, the rope, and veils or dark spectacles, should be brought into play. With proper precautions the ascent presents no difficulty or risk, as in the upper part of the glacier the crevasses are few and well bridged over. The rate of progress will depend on the state of the snow, but from $3\frac{1}{2}$ to 4 hrs. usually suffice to approach the remarkable gap in the ridge connecting the Gspaltenhorn and the Blümlis Alp called the *Gamchi Lücke*. This spot, 9,272 ft. in height, commands a wide view over the mountains and valleys of the Canton Berne,

with the blue line of the Jura in the background, which is especially interesting for the abrupt contrast to the region of ice, snow, and bare rock, lying on the other side. Immediately at the spectator's feet the Gamchi Glacier descends very rapidly into the head of the Kienthal, and forms a rather difficult pass to that valley from the head of the Tschingel Glacier. The détour to the Gamchi Lücke, which well rewards those who have time to spare for the purpose, involves a delay of about ¾ hr. besides the time that may be spent in enjoying the view. The descent from the gap is a little troublesome, but other travellers have not found any such difficulties as are described by M. Roth in his 'Gletscherfahrten in den Berner Alpen,' where he has given a lively and generally accurate account of this pass.

In 4½ hrs., not including halts, nor the détour to the Gamchi Lücke, the traveller may count on reaching the summit of the *Tschingel Pass* (9,252′), lying between the low rocks of the Mutthorn and the precipitous ridge of the Morgenhorn (§ 23, Rte. B), the E. peak of the Blümlis Alp The summit is ill marked, as the plateau of névé curves very gently on either side. A few steps farther, and the traveller looks along the sloping snow-fields that cover the upper part of the *Kander Glacier*, while on the l. hand the range of view is limited by the level snow-ridge of the Petersgrat. The few rocks that appear to rise above its ridge are in reality projecting bastions that do not reach the level of the upper plateau. The most striking object from the Kander Glacier are the precipices of the Blümlis Alp, whose four principal peaks lie in the ridge that bounds the ice-valley on the N. side. The descent towards the Gasterenthal presents no difficulty. The glacier is followed for about 1 hr. from the summit, until the increasing width of the crevasses makes it expedient to exchange the ice for the rocks that appear on the S. bank at a height of 7,940 ft. These form the uppermost extremity of the pastures of Alpetli at the head of the Gasterenthal. The Kander Glacier is shattered into a thousand towers and pinnacles of ice as it falls over a ledge of rock which sustains the upper plateau : and the comparatively small ice-stream that descends into the valley below the ice-cascade is called by the herdsmen of Gasteren Alpetli Glacier. Those who approach it from the SW. have no suspicion that the narrow and insignificant glacier which seems to close the valley is but a mere excrescence from the vast mass, covering a square league of surface, that lies above the barrier. The descent on the rt. bank of the glacier is long and steep—a vertical height of 2,600 ft—effected partly by the rocks and grass slopes, partly along the lateral moraine. Below the glacier are two or three clusters of châlets, the chief of which is called *Im Selden*, reached in 2½ hrs. from the summit of the pass. Here lives during the summer Peter Künzi and his son, the first a good and experienced guide, the second a promising young mountaineer. The remainder of the way to Kandersteg, a walk of 2 hrs., is described in § 23, Rte. C.

This beautiful excursion, being of moderate length, about 9 hrs. from the Steinberg Alp, and involving no appreciable risk with efficient guides, may well serve as a first exercise—a *pons asinorum* in an inoffensive sense—for those who aspire to more intimate acquaintance with the high Alps than can be gained by following the habitual track of tourists.

Route G

LAUTERBRUNNEN TO TURTMAN, BY THE LÖTSCHENTHAL. ASCENT OF THE BIETSCHHORN.

3½ hrs. to the Steinberg Alp—8½ hrs. to Ried—4 hrs. to Turtman—in all 16 hrs.

The glacier pass from Lauterbrunnen to the Lötschenthal being rather longer

than that to Kandersteg described in the last rte., it is still more expedient to pass the night at the Steinberg Alp. Starting early next morning, an active walker may count on reaching Turtman, and thus avoid the poor inns at Ried and Gampel. The descent into the Lötschenthal is usually a more difficult piece of glacier work than any found on the route o Gasteren, and the rope should not be laid aside until the traveller has reached the rocks on the S. side

As far as the summit of the Tschingel Pass this route is the same as that just described leading to Kandersteg. From the summit level on the NW. side of the Mutthorn which divides the Tschingel and Kander Glaciers it is necessary to turn about due S., descending a little into the snow-basin which is drained by the branch of the Tschingel Gl. that descends between the Wetterhorn and the Mutthorn. It would at first sight appear that a shorter course might be taken on the S. side of the Mutthorn; but that part of the glacier is much more crevassed, and time would doubtless be lost in seeking a passage. The ascent to the Petersgrat lies up easy slopes of névé, giving no trouble except after fresh snow. One or two large crevasses are seen; the smaller ones, if they exist, are well bridged over. The *Petersgrat*, reached in less than 1¼ hr. from the Tschingel Pass, or 5½ hrs. from the Steinberg Alp, presents, as stated in the last rte., no defined col, being a flattened ridge, almost perfectly level, about 10,550 ft. in height It commands a noble view of the range of peaks on the opposite side of the Lötschenthal, extending from the Aletschhorn to the Kastlerhorn (10.827′). Preeminent amongst them is the grand rocky peak of the Bietschhorn (12,969′), rising exactly opposite from the snowy ridge which bars the prospect to the S. From the névé of the Petersgrat short glaciers descend towards the Lötschenthal through several narrow ravines that are excavated in the steep N. slopes of that valley. The most considerable of these are the *Inner Pfafflerthal*, the *Ausser Pfafflerthal*, and the *Tellithal*, and by each of these the descent may be effected The writer has followed the Ausserthal Glacier, reaching the rocks on its left bank just below a fine nameless rocky summit, 9,895 ft. in height according to the Federal Map. He found many treacherous snow-covered crevasses at the top, and the glacier steep and much broken lower down, so as to require considerable steadiness on the part both of guides and travellers. The descent by the Telli Glacier is now usually preferred by the guides. It presents a good many crevasses, but no serious difficulties. After reaching its base, a steep descent through a rocky glen leads down to the *Lötschenthal*, an alpine valley whose magnificent scenery has been insufficiently appreciated owing to the want of good accommodation. At its head is the Lötschen Glacier, over which lies the way to Viesch, described in next rte.; thence flows the Lonza torrent, which after watering the valley joins the Rhone at Gampel. In descending by the Ausserthal Gl. the level of the valley is reached at the châlets of Kuhmatten (5,309′). The descent through the Lötschenthal by a path on the rt. bank of the Lonza is very easy, and the scenery highly interesting. In ½ hr the traveller reaches *Platten* (5,085′), the highest hamlet in the valley. Rough night-quarters, but no fresh meat, are found at a little mountain inn lately opened at *Ried*, the next hamlet below Platten. Travellers who follow the usual course through the Tellithal reach the main valley at Platten; but for those who intend to descend to the confluence of the Lonza with the Rhone, it is better to follow a more shaded path, chiefly through forest, along the northern slope of the valley, passing the hamlet of Wyssenried, and joining the main track a short distance above Kippel. This is easily reached in about 1¼ hr. from Platten, or

4 hours from the Petersgrat, if no unusual difficulties are encountered in the descent.

Kippel (4,659′), a very poor place, though the chief village in the valley, has no inn. In case of need, uncomfortable accommodation is found at the house of the curé. From hence to Turtman is a walk of 3 hrs.; for the passes to Kandersteg and Leukerbad see § 23.

From Kippel the first ascent of the *Bietschhorn* (12,969′) was effected in 1859 by the Rev. Leslie Stephen, accompanied by four natives of the valley, of whom one, named Johann Zigler, is recommended as an efficient guide. The expedition occupied 15 hrs.—9 in the ascent, and 6 in returning to Kippel. The course taken lay through the forest on the S slope of the valley until the party reached the *Nest Glacier*, a narrow ice stream which sends its torrent to join the Lonza, a little below Platten. The glacier was crossed, and the remainder of the way lay along the steep rocky ridge which descends from the highest peak towards NNW. In one depression of the arête snow lies; beyond this a high crag, impracticably steep, projects from the ridge, and makes it necessary to clamber along the rocks overhanging the head of the Nest Glacier, and regain the ridge farther on by a difficult climb. 'The arête is a narrow one, and the summit a sharp ridge about 100 yards long, of extremely wild and splintered rock, running N. and S.' [L. S.] Mr. Stephen was not fortunate in respect to weather, and the editor has not heard of any subsequent ascent. This peak shares with the Aletschhorn an unequalled position for a panoramic view. In the Federal Map the mountain is named 'Nesthorn oder Bietschhorn;' but as the next high peak, about 3 m. to NE., is called Gross Nesthorn, the second name is now generally adopted. A third name is Baltschiederhorn, by which it is known in the Baltschiederthal, which descends from its base to the Rhone near Visp.

The *Birchfluh Pass* is extremely convenient for mountaineers going from the head of the Lötschenthal to the Bell Alp. It traverses the Birch Grat, or Beich Grat, which is the range connecting the Schienhorn with the Bietschhorn, and forming the NW. boundary of the Beich Firn (Rte. D). It is approached by the Distel Glacier from the Gletscherstaffel (see next Rte.), or from Kuhmatten. Care must be taken to pass on the NE. side of a projecting point marked 3,120′ on the Federal Map. In going from Ried about 9 hrs.—in the opposite direction 8 hrs.—suffice for this pass. View from the summit magnificent.

Route H.

LAUTERBRUNNEN TO THE ÆGGISCHHORN, BY THE ALETSCH GLACIER.

It is apparent from the map that the head of the valley of Lauterbrunnen is separated from the Valley of the Rhone by two alpine ranges of great height, and unusually difficult of access. Till very lately the range extending from the Mönch to the Tschingelhorn might be said to be impassable. The ancient passage of the Wetterlücke had been rendered so difficult of access by ice, that no one was known to have traversed it during the present century. The intrepid Hugi attempted in vain the ascent of the precipices that enclose the Roththal, and no mountaineer has yet detected a weak point in the barrier between the Gletscherhorn and the Breithorn offering the prospect of a successful escalade. The second ridge, extending from the Dreieckhorn to the Kastlerhorn, is not much easier of access. The only known pass is the Birchfluh, noticed in the last Rte.

Since the Æggischhorn Hotel has become the favourite head-quarters of mountaineers on the S. side of the Oberland Alps, it has been natural to seek a way thence to the valley of Lauterbrunnen, and so complete on the W.

side the tour of the central peaks of the Bernese Alps. One circuitous route, involving in fine weather no serious difficulty, has been for some time adopted. This consists in passing over the SW. end of the Jungfrau range by the Petersgrat, then mounting by the Lötschenthal and Lötschen Glacier to the head of the Aletsch Glacier along which the descent to the Märjelen See is effected by the NE. end of the Aletschhorn range. Of the alternative courses noticed below, all are difficult, and two must be accounted dangerous.

1. *By the Petersgrat and Lötschen Lücke.* The absolute distance from the Steinberg Alp to the Æggischhorn Hotel by the course here described is certainly not less than 35 m. It involves the passage of two cols, each about 10,500 ft. in height, the ascent or descent of the steep rocks of the Tschingeltritt, and many hours spent in traversing snow-fields. The distance is therefore too long for a single day's journey, although some Lauterbrunnen guides, starting before daylight, have accomplished it within that interval. It may be effected from the S. side by sleeping at the Faulberg, but it seems a much better plan to sleep at Ried, or at the Gletscherstaffel, where rough quarters may now be found by travellers. Either place may serve as night-quarters for those who may wish to approach the Æggischhorn from the lower part of the valley of the Rhone by a fine glacier pass instead of following the high-road to Brieg; and there is no advantage in halting at Ferden or Kippel. Mountaineers proceeding from the Baths of Leuk or from Kandersteg to the Æggischhorn will reach the Lötschenthal by some one of the passes mentioned in § 23 (Rtes. C and D), avoiding altogether the hot and uninteresting valley of the Rhone. From the head of the Lötschenthal to the Märjelen See the way lies altogether over ice or snow, the distance—allowing for unavoidable détours caused by crevasses—being about 18 m. There is probably no other greater glacier pass so free from danger or difficulty, if made in suitable weather and with proper precautions, of which the most important are the use of the rope in the upper region where the névé stretches for miles in gentle slopes without a break, and that of veils or spectacles to protect the eyes.

In ascending the Lötschenthal, 2½ hrs. are counted from Ried to the foot of the *Lötschen Gletscher*, also called in the valley Lange Glacier, 6,175 ft. above the level of the sea. At a group of rather well-looking châlets, called Gletscherstaffel, ½ hr. below the end of the glacier, accommodation for the night may be found nearly as good as that at Platten. In any other part of the Alps the Lötschen Glacier might count as a considerable ice-stream, the main glacier descending from the Lötschen Lücke, being about 4½ miles in length. It receives a considerable branch from the N. descending from the Grosshorn and the Mittaghorn. On the S. side the Aletschhorn range rises more steeply; one small affluent —the *Distel Gl.*—descends near the foot of the main glacier. The lower and upper portions of the Lötschen Gl. are nearly free from crevasses, but the middle part is much broken, though not so much as to oppose serious obstacles to experienced icemen. The usual course is to cross the Lonza at the Gletscherstaffel, and follow the l. bank to the S. side of the glacier close to the junction of the Distel Glacier. Beyond the junction the course is by a sheep-path running along the base of the Birchfluh, returning after a while to the centre of the main glacier. 'It is a better way to ascend by the grassy slopes on the rt. bank of the Lange Gl. as far as the junction with the Ahnen Gl.' [A. G. G.] It is necessary to pass near the base of the grand ice-fall by which the latter glacier descends from a hollow between the Grosshorn and Mittaghorn. After reaching the névé, fresh crevasses opening near the rt. bank drive the traveller back towards the opposite side; but he should

not approach too near to the precipices of the Distelhorn, as this sends down frequent avalanches and blocks of stone that threaten danger to the unwary intruder. A rather steep snow-slope, traversed by a wide bergschrund which is usually bridged over, leads in 4 hrs. from the Gletscherstaffel to the summit of the pass.

The *Lötschen Lücke*, also called Lötschsattel (10,512′), is the lowest point in the range of the Ahnengrat, a transverse ridge linking together the parallel ranges whose highest peaks are the Jungfrau and the Aletschhorn. The latter noble peak rises near at hand, nearly due W. of the pass, in extremely steep snow-slopes. Bearing somewhat to the l. in the gentle descent from the Lücke, 1½ hr. usually suffices to attain that central point of the Aletsch Glacier, whence, as described in Rte D, its four principal arms diverge. From thence the Æggischhorn Hotel is reached in 3½ or 4 hrs. (or fully 10 hrs., exclusive of halts, from Ried), by the Märjelen See (see Rte. D).

2. *By the Wetterlücke.* Mr. A. W. Moore, with Christian Almer, were the first to reopen this ancient pass, already noticed in Rte. F. Though much shorter in distance for those going from Lauterbrunnen to the head of the Lötschenthal, it takes quite as much time as the détour by the Petersgrat, and at certain times a ladder might be necessary for the passage of the Breithorn Glacier.

Crossing the spur of the opposite hill, Mr. Moore mounted from the Gletscherstaffel in 2 hrs. to the head of the Inner Pfafflerthal. To the l. is seen a tongue of glacier descending from the Petersgrat, in front another coming from the Wetterlücke. Mounting gradually above the l. bank of the torrent, and climbing through a steep gully, the latter glacier was reached at its extreme SE. angle, close under a great spur of the Breithorn. The ascent from that point to the col is gentle, and seems easy; but the névé is undermined by enormous chasms masked by a thin coating of snow, and requires the utmost care. The Breithorn Glacier over which lies the descent to the Steinberg is extremely difficult. Mr. Moore bore rather towards the l. bank; in 1865 Messrs. Hornby and Philpott found a shorter course by keeping to the rt. after they had descended a short way from the col, and gaining the rocky buttress that sustains the upper part of the glacier. Here all difficulties were over, but the descent of the ice-wall on to the rock was extremely difficult, and may be sometimes impossible. When taken from Lauterbrunnen *keep as far as possible to the left* in descending from the Col.

3. *By the Lawinen Thor.* An account of this pass is given in the first series of 'Vacation Tourists.' It has not been repeated, and is too hazardous an expedition to be recommended for future adoption.

The *Lawinen Thor* is the name given by Professor Tyndall to a pass made by himself and Mr. F. V. Hawkins, from Lauterbrunnen to the Aletsch Glacier by the head of the *Roththal*. That savage glen, an ice-basin bound round by precipices of dark rock, is closed by the ridge connecting the Jungfrau with the Gletscherhorn, which on the W. side presents a range of formidable-looking rocks seamed by slender couloirs of snow or ice.

Starting from Lauterbrunnen with Christian Lauener and the younger Kaufmann of Grindelwald, August 9, 1860, in 2½ hrs. they reached the châlets of the Stufenstein Alp. The small glacier of the Roththal occupies the centre of a very grand amphitheatre, and is well worth a visit from Lauterbrunnen by those who do not aim at a further ascent. Mounting by the moraine on the rt. bank of this glacier, the party soon reached the névé at the head of the amphitheatre. The climb from the base of the rocks through the narrow couloir which led to the ridge cost 7 hrs., and the Æggischhorn inn was reached after nightfall.

At least three other difficult and dangerous passes have been effected by British travellers over the ridge between the Jungfrau and the Tschingelhorn. Messrs. Hornby, Philpott, and Morshead reached the col—called by them Ebuefluh Joch—between the Ebnefluh and Mittaghorn, in 10 hrs. from Trachsellauenen. The same travellers crossed the *Schmadri Joch* between the Grosshorn and Breithorn, and, finding the snow in good order, reached Lauterbrunnen in less than 9 hrs.' actual walking from the Gletscherstaffel in the Lötschenthal.

Messrs. L. Stephen, Macdonald, and F. C. Grove, with Melchior and Jacob Anderegg, and Johann Bischof, mounted through the Roththal to a point a little above the Roththal Sattel, made the détour to the summit of the Jungfrau in only $1\frac{3}{4}$ hr., and reached the Æggischhorn in 18 hrs., including halts, from Lauterbrunnen. These must all be reckoned as *tours de force*, though, when better known, the Schmadri Joch may be found a useful pass.

Route I.

GRINDELWALD TO THE ÆGGISCHHORN. ASCENT OF THE MÖNCH AND ALMERHORN.

As stated in Rte. B, there is a tradition in the Bernese Oberland, supported by some documentary evidence, that, before the great increase of the glaciers, which appears to have occurred during the last two or three centuries, a practicable pass existed between Grindelwald and Viesch in the Valais. In modern times the old pass had been altogether disused, and its precise position is a matter of uncertainty. Of late years, since the hotel on the Æggischhorn has been frequented by English mountaineers, the practicability of traversing the great ridge that encloses the head of the Aletsch Glacier, and so connecting the Æggischhorn with Grindelwald and the Wengern Alp, has become at once a matter of practical interest, and a topographical problem which has excited to the utmost the emulation of adventurous mountaineers. The result has been, that no less than four such passes have been effected. But one of them—the Mönch Joch—can be recommended even for practised mountaineers. Two of the number—the Jungfrau Joch and the Eiger Joch—may be counted among the most difficult hitherto accomplished in the Alps. Experience along with strength and activity in the traveller, and the assistance of first-rate guides, who alone should be taken on such expeditions, may reduce the risk within moderate limits; but it cannot be altogether removed by any amount of skill or experience. It is a further matter for consideration that those who undertake either the last-mentioned passes, or the Viescher Joch, must be prepared for the possibility of having, after a very laborious day, to pass the night in some exposed position at a great height above the sea, without fuel or extra covering; a prospect which to many persons is more discouraging than the inevitable but exciting risks of a perilous ascent.

1. *By the Jungfrau Joch.* Those who view the Jungfrau from the NW., or in the opposite direction from the Aletsch Glacier, must equally remark the well-defined col or depression which separates the peak from its neighbour the Mönch. This col forms in truth the natural termination of the Aletsch Glacier, and it has been seen, in Rte. D, that it is accessible from the Æggischhorn by the long but easy ascent of that great ice-stream. The case is very different on the NW. side facing the Wengern Alp. Thousands of travellers have annually crossed that pass, and have gazed up with admiration at the precipitous crags and impending ice-masses that seem to oppose an insurmountable barrier to human progress. It does not appear that the

idea of attempting to escalade this stupendous rampart ever presented itself to the mind either of foreigner or native, until some adventurous members of the Alpine Club, emboldened by the success of an almost equally hopeless-looking enterprise—the passage of the Eiger Joch—resolved to make the attempt. Two separate parties, intent upon the same design, happened to meet at Grindelwald in July 1862, and resolved to join their forces for the assault. The successful party consisted of Messrs. L. Stephen, F. J. Hardy, H. B. George, Liveing, Moore, and Morgan. with Christian Almer, Christian and Peter Michel, Ulrich Kauffmann, P. Baumann, and C. Bohren, as guides. As on many other difficult expeditions, the two first guides especially distinguished themselves. The party having been forced to return on the first day for want of the means for bridging over a great bergschrund, returned on the following day with a ladder 25 ft. in length, borne by Peter Rubi, a porter from Grindelwald, whose strength, steadiness, and good-humour under trying circumstances were highly commended. The way lies at first by the rocky buttress of the Mönch, separating the Eiger and Guggi Glaciers mentioned in Rte. B: though steep, it is not very difficult of access. From the buttress it is necessary to descend a little in order to reach the Guggi Glacier, which may be ascended without meeting serious obstacles as far as a considerable plateau, scarcely seen from the Wengern Alp. This halting-place, reached in about 3 hrs., lies immediately under the most difficult and dangerous part of the ascent. In front a pile of ice débris, lying along the base of a high ledge of rocks, seems to offer a possible route; but the débris is produced by the fall of masses of ice from an upper shelf of glacier, and an attempt to mount in that direction was found to be not only highly dangerous, but beset with insurmountable obstacles. To the rt. the glacier descends in shattered masses, divided by yawning crevasses. The impending towers and pinnacles, along and around which it is necessary to climb or creep by steps hewn with the ice-axe momentarily threaten the intruders with destruction; and the frequent recurrence of crumbling blocks of ice proves the fragility of the material and the frequency of avalanches. The chance of passing in safety mainly depends on the travellers being able to get through this part of the climb before the sun has struck the ice, and loosed the bands that hold together the tottering structure. Towards the summit is a great bergschrund, in most places 30 ft. wide, traversing the whole width of the glacier, and impassable without a rather long ladder. Above the bergschrund is a second and smaller plateau, distinguishable from the Wengern Alp, which lies immediately under the long slopes of broken névé that lie below the col. Fully 2 hrs. must be allowed for reaching this from the lower plateau, perhaps a much longer time when it is necessary to cut steps for a great part of the way. Here there is a clear view of the last very arduous stage in the ascent. A single patch of dark rocks juts out from the snow in the ridge connecting the Jungfrau with the Mönch. To the l. of this the névé, broken in huge *séracs*, whose interstices are filled with snow, lies at an estimated angle of between 50° and 60°, the whole being irregularly cut through by crevasses. To the rt. of the rocks the névé lies in a more even, but still steeper slope; and after an attempt made by C. Almer and C. Michel to cut their way up it, the hardness of the névé and the perilous steepness of the wall induced them to return in order to try the alternative course by the *séracs*. This lies well to the l. of the last rocks, and though excessively steep, involves less of real risk than the lower portion of the ascent. After more than an hour's climb, direct progress was arrested by a great wall of blue ice, whose projecting cornice of snow was fringed by long icicles It was necessary to

bear to the l. in the direction of the Mönch, along the base of the wall by a slippery pathway of ice formed from the dripping from the icicles above. At a point where the pathway thinned out nearly to a point, and was cut across by a transverse crevasse, the wall became low enough to be scaled by the ladder. This was the last serious obstacle: a moderate slope of névé, unbroken by crevasses, then led up to the summit of the pass, which was attained in $8\frac{3}{4}$ hrs. from the Wengern Alp, inclusive of halts. After reaching the first patch of rocks, a short way below the col on the S. side, the party divided: Messrs. George and Moore, with C. Almer and U. Kaufmann, went down to the Æggischhorn, which was reached in $6\frac{1}{2}$ hrs., exclusive of stoppages, while the remainder of the party returned to Grindelwald by the Mönch Joch.

Since the first successful passage the col has been traversed several times. In the second ascent, made by Messrs F. W. Jacomb and Rennison, with C. and P. Michel, and two other Grindelwald guides, with a view to turn to account the steps cut a few days before in the ascent of the Silberhorn, the Michels took a course from the main plateau of the Guggi Glacier lying farther to the rt., or nearer to the Jungfrau, than in the previous ascent. The glacier seems to be rather less broken on that side, but the slopes are even more formidably steep. Mr. Jacomb states that he measured with the clinometer inclinations of 60°, and even up to 72°.

The height of the *Jungfrau Joch*, as determined by Mr. Jacomb by observations with the Aneroid Barometer, boiling-point apparatus, and level, is 11,095 ft., probably a near approximation to the exact height.

For obvious reasons this pass should be taken from the Wengern Alp side. It is true that Messrs. Hornby and Philpott, with C. Almer, C. Lauener, and J. Bischof, having reached the summit from the Aletsch Glacier at 5 A.M., descended to the Wengern Alp, getting off the ice at 10.30. The powers of their first-rate guides were tasked to the utmost, and the danger, if they had been delayed, very serious.

Through the familiarity with the formidable-looking crags and glaciers of the Jungfrau gained in these and other similar expeditions by the Oberland guides, at least two travellers — Mr. G. E. Forster, and subsequently M. v. Fellenberg — have been enabled to reach the summit of the Jungfrau from the Wengern Alp.

2. *By the Eiger Joch.* Like the pass just described, this should be attempted only from the Wengern Alp. It has been effected but once, by the Rev. Leslie Stephen and Messrs. W. and G. S. Mathews, with Ulrich Lauener of Lauterbrunnen, and J. B. Croz and M. Charlet of Chamouni.

It has been observed in Rte. B, that the Eiger does not lie in the ridge of the Oberland Alps which divides the basins of the Rhone and the Aar, but forms a promontory extending NNE. from the Mönch, and connected with it by a long and high arête, in which jagged teeth of rock project through a coating of ice. At the S. end, where this arête abuts against the shoulder of the Mönch, it overlooks the gently-sloping plateau which forms the summit of the Mönch Joch (next to be described), and the descent on the side of the Aletsch Glacier presents no serious difficulty.

In August 1859, the three enterprising mountaineers above named, failing to perceive any route by which the Jungfrau Joch could be attacked with a fair prospect of success, resolved to attempt to pass from the Wengern Alp by the N. and E. sides of the peak of the Mönch. Starting at 4 a.m. they soon reached the Eiger Glacier, and mounted for some distance along the side nearest to the Eiger. On reaching the very much crevassed middle region of the glacier, some time was lost in the endeavour to force a direct way. The correct course is to cross to the S. bank below the rocks of the Mönch.

After a short ascent the form of the crevasses makes it expedient to cross back to the opposite side, nearly to the edge of the glacier, here held up by the great rocky buttress of the Eiger, so remarkable from the Wengern Alp. Further progress seems to be barred by the menacing condition of the séracs; but the difficulties may be avoided by crossing the glacier diagonally a third time to a sort of snow valley, where the crevasses are apparently filled up by avalanches from the Mönch. By this circuitous but not very difficult route the party reached the uppermost plateau of the glacier, lying immediately below the ridge connecting the two peaks. On the side nearest the Mönch the ridge is accessible only by extremely long and steep slopes of hard névé. At the end approaching the Eiger the ridge is far easier of access, and this therefore was the first object of attack. On gaining the summit the travellers found themselves at the top of a tremendous precipice overlooking one arm of the Lower Grindelwald Glacier, while the arête to the rt. connecting them with the Mönch was broken through by so many jagged teeth of rock, and at the same time so narrow and difficult, that 6 hrs. would probably have been consumed in passing along it. It was therefore thought expedient to return, and to attempt the ascent by the ice-slope, as it should be called since the névé is so hard and slippery as to make step-cutting very laborious. Ulrich Lauener on that occasion displayed extraordinary strength and endurance, having in 5 hrs. of uninterrupted work cut 580 steps on an ice slope of from 50 to 52° inclination. That effort sufficed only to enable the party to gain a patch of rock some way below the summit of the ridge, and more than an hour more was expended in reaching the desired goal. Turning to the right along the arête, they finally reached at 6 p.m. the point on the shoulder of the Mönch which forms the summit level of this pass. It has been supposed that this corresponds with a point marked on the Federal Map 3,747 mètres, or 12,294 ft. in height; but this must be considered uncertain. The view is rated by Mr. L. Stephen, who has seen at least as much of the upper region of the Alps as any other traveller, as unequalled for grandeur and variety. Unlike other passes, this commands the whole of three glacier basins. Beyond the Guggi Glacier lies the Wengern Alp, and the mountains, here dwindled into hillocks, that separate it from the Lake of Thun, and farther still, the plain of Switzerland bounded by the Jura. Eastward is the great basin of the Lower Grindelwald Glacier, with the rugged peak of the Schreckhorn, and the three Wetterhörner rising above the Mettenberg, while the sharp point of the Finsteraarhorn is seen above the Walcherhörner. Lastly, the magnificent stream of the Aletsch Glacier stretches far away to the S. between the snowy peaks that guard it on either hand. This is doubtless a finer point of view than that from the Jungfrau Joch, and in a favourable condition of the snow may be reached in a long day's excursion from the Æggischhorn; but it would be found rather too distant for ordinary pedestrians. It may, however, be combined with the passage of the Mönch Joch by a slight detour, which is recommended to future travellers.

In descending to the Aletsch Glacier the discoverers of this pass were benighted before they could reach the comparative shelter of the Faulberg cave, and were forced to pass the night on some exposed rocks at the S. base of the Trugberg, where their position in case of bad weather would have been very critical. The Æggischhorn was reached on the following morning about 9 a.m. in about 29 hrs. from the Wengern Alp, of which 22 hrs. were spent in active exertion.

3. *By the Mönch Joch: Ascent of the Mönch.* Unlike the two last passes, this must be taken from Grindelwald instead of from the Wengern

Alp, and is the most direct way from that place to the valley of the Rhone. As compared with them it may be called easy, and the chief objection to it arises from the distance to be traversed; which, even under favourable circumstances, requires 15 hrs. exclusive of halts. It is possible, however, to break the journey, and obtain some rest on the way, by passing the night in the hut at the Zäsenberg, or in a cave called by English travellers the Eiger Hole. In making the pass from the Æggischhorn, the halt may be made at the Faulberg. or, in very fine weather, by bivouacking on the rocks at the S. base of the Trugberg. In this way time may be found for a détour to the Eiger Joch, and even for the ascent of the Mönch or the Vieschерhorn. Late in the season, when the snow-bridges over the crevasses have disappeared, it is better to make the passage from the Grindelwald side, as the descent of the very broken glacier on that side has been found, especially in 1865, very difficult for a party not provided with a ladder.

The first recorded passage of the Mönch Joch was effected in 1858 by the Rev. C. Hudson, and Messrs. Birkbeck and Joad, with Melchior Anderegg and Victor Tairraz as guides. It lies on the E. side of the Mönch, between that peak and the range of the Vieschergrat. and consists of a nearly level plateau of névé which descends on the S. side to the Aletsch Glacier, and in the opposite direction to the S. branch of the Lower Grindelwald Glacier, called on the Federal Map Viescher Gl. It is unfortunate that the confusion existing between that glacier and the greater ice stream bearing the same name, which flows from the base of the Finsteraarhorn towards the village of Viesch, should be perpetuated by that authentic map, and that a similar confusion should have been allowed to continue in regard to the group of high summits lying in the space between the head of the Grindelwald Glacier and the Grünhorn Lücke (bounded on the W. by the Trugberg Glacier, on the E. by the greater glacier of Viesch), and the rather lower group of the Walliser Viescherhörner, extending southward from the Grünhorn Lücke to the Märjelen See.

Since the publication of the first edition of this work, the nomenclature of this and some other portions of the Bernese Alps has been revised, and a new edition of the 18th sheet of the Federal Map will shortly appear, with various alterations. As it is probable that the names proposed on so high an authority will ultimately be adopted in Switzerland, it has seemed expedient to conform to them in the present work, although the new names cannot all be considered satisfactory. For the peaks immediately N. of the Grünhorn Lücke the collective name, Grünhorn Group is proposed, and for the separate peaks the names already mentioned in Rte. D. Instead of adopting the existing name, *Walcherhörner*, for the group lying between the Mönch and the Agassizhorn, the cumbrous designation *Grindelwalder Viescherhörner* is retained. The name *Gross Viescherhorn* is transferred from the lowest to the highest of this group, for which the name *Almerhorn* was proposed in the first edition of this work. Farther S. stands the *Hinter Viescherhorn* (13,189′), while the name *Klein Viescherhorn*, or Oehs, is given to the NE. peak, rising immediately above the Zäsenberg, as seen from the Bänisegg. This is 12,707 ft. in height. It seems scarcely advisable to overload this work by introducing unimportant names now for the first time proposed. This remark applies especially to separate names assigned to the upper portion of several glaciers; *e.g.* the name Ewigeschneefeld, given to the upper basin of the Trugberg Glacier, between that mountain and the Grünhorn Group.

The ascent of the N. side of the Mönch Joch may perhaps be permanently altered by the changes in the

upper part of the glacier that have occurred since 1865. The ice is much broken, and, though not indispensable, a ladder often serves to shorten the way and save time. The best course for approaching the pass is to cross the Lower Grindelwald glacier above the lower ice-fall, and ascend along the l. bank of the S. branch, or Vieseher Glacier, by the Mittelegi, a ridge which descends from the Eiger. Here is a small cave well known to the Grindelwald guides, reached in about 4½ hrs. from the village, where shelter may be had for the night. The ascent from thence, though not dangerous to skilful ice-men, is quite difficult enough to require the services of thoroughly good guides. According to the state of the snow, from 4½ to 5 hrs. are required to reach the summit; and this time may be exceeded when the névé is so hard as to require the use of the axe. The view, already magnificent, may be extended by a détour to the summit of the Eiger Joch lying on the adjoining shoulder of the Mönch. The height of the *Mönch Joch* has not been determined by direct observation. The figures 3,560 on the Federal Map, equivalent to 11,680 ft., appear to refer to the W. end of the rocks of the Vieschergrat, a little above the level of the pass. Two courses are open for the descent to the Æggischhorn. Bearing to the rt. across the snow col that separates the Trugberg from the Mönch, there is no great difficulty in descending upon the head of the Aletsch Glacier, where this route joins that from the Jungfrau Joch (see Rte. D). From 7½ to 8 hrs. should be allowed for reaching the hotel. The other course lies to SE., over the great field of névé lying E. of the Trugberg, whence flows the Trugberg Glacier. This is usually the shorter course; but the lower part of the Trugberg Gl. above its junction with that of Aletsch forms a steep and broken ice-fall, and some delay must be expected in the passage. It will generally be found expedient to pass along the rocks that form the S. base of the Trugberg. Like Messrs George and Moore, who passed this way in 1862, the writer in 1857 was guided to the best passage between the rocks and the lower glacier by the trail of a chamois. These rocks were turned to account by the last-named travellers as a halting-place for the night. They are conveniently placed for those who attempt the ascent of the Mönch or the highest Vieseherhorn, but except in very fine weather they are too exposed to suit most travellers.

The ascent of the *Mönch* (13,438′) may under favourable circumstances be combined with the passage of the Mönch Joch, but a long summer's day is not too much for an expedition which combines a difficult ascent with a very long walk. Though usually presenting a rounded outline, this is undoubtedly to be reckoned among the more difficult of access of alpine peaks. An account of the ascent in 1855 by a lady who writes under the name Countess Dora d'Istria is evidently fabulous, so far as regards the ascent from the Mönch Joch to the summit. The first authentic ascent was by Dr Porges, of Vienna, with Christian Almer and other Grindelwald guides. It was effected by the E. ridge, which descends towards the Mönch Joch. The difficulties were so great, that it was necessary to descend by the S. arête, and the party slept for two successive nights on the rocks of the Vieschergrat near the top of the pass. Nearly at the same point a hut has now been built which will much assist future explorers. In 1862, two attempts to reach the summit, the one by the S. arête, the other from the Wengern Alp, by the great buttress that separates the Eiger and Guggi glaciers, were both unsuccessful. In 1863, Mr. Macdonald started with M. Anderegg and C. Almer at 1 A.M. from the Faulberg, reached the summit about 9 A.M., and was able to return to the Æggischhorn by 6. 45 P.M. Six days later, the Rev. J. J. Hornby and M. T. H. Philpott, with Christian Almer, Christian Lauener, and J. Bi-

schoff of Lauterbrunnen, started from the Eiger Hole at 2. 15 A.M., reached the summit at 11, and descended to the Æggischhorn at 8 P.M. Both these ascents were accomplished by the S. ridge of the mountain which connects the summit with the col separating it from the Trugberg, 3 hrs. being required for the ascent, and little more than 1 hr. for the descent. Although the ridge is very sharp, a part of the ascent may be accomplished along its W. face; but after attaining a point which looks from below to be the top, it is found that this is still at a considerable distance, and must be reached by a very sharp nearly level arête of ice. The summit is a flattish plateau whose highest point does not command a view of the Wengern Alp: this is seen by approaching the N verge, which also overlooks the ridge leading to the Eiger.

The ascent of the *Gross Viescherhorn* (13,281′), called *Almerhorn* in the 1st edition, was first effected in 1862 by Messrs. George and Moore, with Christian Almer and Ulrich Kaufmann as guides. The numerous crevasses of the névé on the E. side of the Trugberg Glacier were well covered over, and after passing a wide bergschrund, and a steep but short slope of ice, the last part of the ascent was up a wall of very steep rocks, requiring skilful and cautious climbing. The top is a ledge of rock overhanging the upper basin of the Grindelwald Glacier. It appears to be the most centrally placed of all the higher peaks of the Bernese Alps. The Finsteraarhorn and the Schreckhorn are especially striking from the startling steepness of their uppermost ridges. The descent by the bergschrund and the crevassed Trugberg Gl. must be difficult after the sun has acquired power. It is expedient either to sleep at the Trugberg rocks, or to carry a ladder.

4. *By the Viescher Joch.* This pass was discovered in 1862 by Messrs. L. Stephen, Hardy, Liveing and Morgan, with the two Michels, Baumann, C. Bohren, and Inabnit, as guides. Sleeping at the Kastenstein, a hole under a rock near the W. foot of the Strahleck pass, they ascended one of the minor ice-streams that flows into the head of the Lower Grindelwald Glacier on the SE. side of the Klein Viescherhorn, or Ochs. The summit of the pass was reached after many hours' fatiguing ascent through soft snow, and after passing a large bergschrund where a ladder borne by one of the guides was of essential service. Owing to bad weather, no definite account of the pass can be given The way lay over the Viesch Glacier, and the Märjelen Alp was reached in 7 hrs. from the summit; but having lost their way in the dark, the travellers did not reach the Æggischhorn Hotel until near 3 A.M., after 22 hrs.' active exertion. Being decidedly longer than the Mönch Joch, and inferior in point of scenery, it may be inferred that this pass offers but few attractions for future travellers.

5. *By the Agassiz Joch.* This fine pass was first made in 1867 by Messrs. Hornby, Philpott, and Morshead. Starting from the Kastenstein, they crossed the Finsteraar Joch (Rte. K), and descended but a short way in order to approach the great couloir between the *Agassizhorn* (12,960′) and the Finsteraarhorn. The snow being in perfect order, they mounted in 2 hrs. to the col which lies between those peaks, and descended in 7 hrs. to the Æggischhorn by the Grünberg Lücke.

A still more difficult and unattractive pass was made in 1868 by Mr. G. E. Forster, and called by him Ochsenjoch. It lies E. of the Ochsenhorn, and cost 6 hrs. of step-cutting in the ascent.

Route K.

GRINDELWALD TO THE GRIMSEL. ASCENT OF THE SCHRECKHORN.

The passes described in the two last rtes. all lead from the Bernese side of the Oberland Alps to the Valley of the Rhone. The great glaciers which on the one side feed the sources of the Aar, and on the other those of the Schwarze Lütschine, are connected by passes little less lofty, and quite as interesting for the grandeur of the scenery through which they conduct the traveller. These remain to be described.

The best known and on the whole the most interesting route between Grindelwald and the Grimsel is by the Strahleck Pass. A parallel pass called the Finsteraar Joch supplies an agreeable variation on the ordinary course, while the Lauteraar Joch, lying on the N. side of the Schreckhorn, diverges widely from it. As the first of these is better taken from the side of the Grimsel, the traveller is here supposed to start from that place The other two passes may with more advantage be taken from the Grindelwald side.

1. *By the Strahleck Pass. Grimsel* to *Grindelwald*, 12 to 13 hrs., exclusive of halts.

In spite of the interest attaching to many of the high passes discovered during the last few years by the enterprising members of the Alpine Club, the writer is disposed to repeat an opinion advanced by him some years ago, that, if required to select a single pass by which a stranger to the upper region of the Alps should gain the fullest and most lively impression of the characteristic beauties of the ice-region. his choice would lie between this and the Col du Géant. The distance may be shortened by sleeping at the Pavillon on the Aar Glacier when the pass is made from the Grimsel, or at the Bänisegg châlet in the ascent from Grindelwald; but a moderately active walker, starting in good time, may easily accomplish the entire distance in one day, and may well prefer this course to the discomfort of sleeping in bad quarters. It is desirable in the latter case to start some time before daylight, so as to have full time to enjoy the expedition. It is scarcely necessary to say that good weather is an essential condition for enjoyment, and that at least one thoroughly reliable guide should be taken.

A short descent from the Grimsel Hospice (Rte. C) leads down to the Aar, along which a tolerable path passable for mules leads in about 1 hr. by the N. bank of the stream to some stone huts, 6,139 ft. above the sea. These are close to the lower end of the great Unteraar Glacier. This is so covered with blocks of stone and finer gravel, that a stranger approaching it does not suspect the presence of ice. The medial moraines, which higher up may be easily traced to their respective sources, here run together so as to overlie the entire terminal slope of the glacier. After scrambling up the edge, and amidst large scattered blocks, the traveller reaches the comparatively flat surface which extends for a distance of rather more than 5 m with a gentle ascending slope, almost unbroken by crevasses, to the base of the promontory called the *Abschwung*, which projects to the E. from the ridge of the Lauteraarhörner, and separates the two principal ice-streams whose union forms the Unteraar Glacier. From its base to the foot of the Abschwung (8,284′) the surface of the glacier rises about 2,120 ft. The range on the N. bank of the glacier rises gradually towards the W. from the *Bromberg* (8,675′) to the *Schneehorn*, or Schneestock (11,158′ ?). On the opposite side the *Zinkenstock* (9,987′), *Grünberg* (10,361′). and *Thierberg* (10,410′), separate this from the parallel ice-valley of the Oberaar Glacier. Among the objects of interest in this part of the glacier. the most remarkable is the great medial moraine descending from the Abschwung. Partly owing to the great

size of the blocks composing it, partly to the protection it affords to the ice against the action of the sun's rays, this forms a ridge seldom less than 50 or 60 ft. in height, quite shutting out the view across the glacier from those who approach it on either side. Under one of the huge blocks of this moraine M. Agassiz, with several scientific friends, found shelter in a very rude hut, whither they returned for several successive seasons while engaged in arduous observations upon the glacier, and in occasional exploration of the neighbouring mountains. This comfortless dwelling was rendered uninhabitable by the splitting of the great block which served as a roof, and more convenient quarters were afterwards provided in a solid stone cabin with two rooms, called the Pavillon, built by M. Dolfuss Ausset on the steep N. bank of the glacier. It contains a stove, cupboard, benches and a table, with a loft overhead. The chief inducement to use it is the beautiful view of the glacier and the surrounding peaks by moonlight, which is gained under favourable circumstances The Pavillon is reached by a stiff climb up the rocks on the l. bank in 3 hrs. from the Grimsel. The first observations on the motion of glaciers possessing the least pretension to accuracy were made by Hugi, who noticed the effect of the movement in carrying downwards remarkable blocks on the medial moraine, and measured their distance from the Abschwung after a known interval. More detailed and accurate measurements were subsequently made by M. Agassiz. For these and many other particulars the reader is referred to that author's *Système Glaciaire*, and to Desor's *Excursions et Séjours dans les Glaciers*. It may be roughly estimated that a block lying on the surface of the ice employs from 120 to 150 years to travel from the Abschwung to the foot of the glacier, a distance of about 9,000 yards. Throughout that space the heat of summer suffices not only to remove the snow that falls on the glacier during winter, but to melt a certain portion of the surface of the ice. The average thickness so removed annually may be reckoned at about 7 ft. When it is remembered that the glacier also wastes by its lower surface, it may be safely inferred that the thickness of the glacier below the Abschwung can scarcely be less than 1,000 ft.

On approaching the Abschwung it is seen that the natural prolongation of the valley containing the main glacier is that passing along the N. side of the Schreckhorn and the Lauteraarhörner. The S. branch—called Finsteraar Glacier—enters almost at a right angle through an opening between the Abschwung and the *Escherhorn* (10,105′). The latter summit terminates a short but lofty range extending NNE. from the *Oberaarhorn* (11,923′) through the *Grunerhorn* (11,542′) and *Scheuchzerhorn* (11,463′). On reaching the confluence of the Finsteraar Glacier the ascending slope becomes more rapid, and that glacier shows numerous crevasses of no great width or difficulty. On reaching the névé these are usually completely bridged over, and the eye ranges for miles over nearly unbroken surfaces of snow. After ascending SW. for about 1 hr. the view on the rt. hand begins to open, and it becomes evident that the upper basin of the Finsteraar Gl., lying between the two great NW. and SE. ranges which culminate in the Finsteraarhorn and the Schreckhorn, is divided longitudinally by a third and much lower ridge parallel to the others. This is called the Mittelgrat, or Strahlgrat, and consists of steep and rugged crags without any remarkable projecting peak. Its highest point attains 11,424 ft. The NW. end of the Mittelgrat is united to the Schreckhorn range by a transverse ridge over which lies the Strahleck Pass. It was long supposed that the Mittelgrat was united in a similar manner to the range of the Finsteraarhorn, and it is so represented on many

maps, but this (as is shown in the notice of the Finsteraar Joch) is an error.

There are few more striking objects in the Alps than the peak of the Finsteraarhorn as seen rising in abrupt and stern grandeur from the nearly level surface of the glacier. This view is probably still better seen by the rival route next to be described. The narrow and wild snow-valley leading up to the Strahleck Pass retains the name *Schreckfirn* originally given to it by Hugi. On approaching the pass, the snow-covered ridge closing the valley appears so formidably steep to the eye of a traveller not used to similar ascents, that he involuntarily looks to the steep rocks on his left in the expectation of discovering some easier exit. It is not impossible to mount on that side; but the ascent is more difficult, and much time is lost by it. A gradually-increasing slope leads up to the bergschrund which guards the base of the well-known ice-wall of the Strahleck. That term is not quite correctly applied to this slope. It sometimes happens that snow lying on an inclined plane exposed to the sun becomes so altered in structure, owing to the repeated melting and freezing of the surface, as to acquire a thick crust of ice requiring several blows of the axe to cut steps. But the SE. face of the Strahleck is rarely, if ever, in this condition; the snow is commonly in the state of névé, often soft enough to make it possible to kick steps into its steep face.

The earlier explorers of this district use language which gives a rather exaggerated impression of the steepness of the slope. The writer does not believe that it anywhere exceeds 48°, which is about the pitch of a good old-fashioned roof. The height of the ridge is about 800 ft., and about two-thirds of the way up a rib of rocks juts out here and there from the surface of the snow, and affords firm footing; the inclination soon becomes more gentle, and the summit of the *Strahleck Pass* (10,994 ft. in height, according to the latest measurements) is attained in from 7 to 7½ hrs. from the Hospice, exclusive of halts. It lies immediately at the base of a great buttress of the Schreckhorn, overlooking the basin of the Grindelwald Glacier. The view is all but exclusively confined to the surrounding glaciers and peaks, including but a mere glimpse of the lower country towards the L. of Thun. The descent is somewhat less rapid than on the other side, yet steep enough to require caution, and the rope should on no account be laid aside until the traveller is clear of the névé. Some considerable crevasses, usually well bridged over, intersect the slope.

After accomplishing the first and steepest part of the descent, the course lies to the l. by the extreme eastern branch of the Lower Grindelwald Glacier. The *Kastenstein Glacier* is now seen descending from the Schreckhorn, whose precipices, too steep for snow to cling to them, tower upwards in the background. Travellers join the main stream of the glacier at a point below the highest ice-fall descending from the Finsteraar Joch, and above a second ice-fall where it forces its way down between the base of the Viescherhörner to the S., and a projecting buttress from the Schreckhorn range to the N. There is here a choice between two routes. The more direct way is by the rocks on the rt. bank. This involves the descent of a very steep ledge of rock, difficult only because, when approached from above, it is impossible to see the clefts that give good holding for both feet and hands. A more serious obstacle arises late in the season, when, at a point lower down, it becomes necessary to return to the ice, and the glacier is found to have shrunk below its usual level, leaving a very steep and slippery wall of rock. (See 'Peaks, Passes, and Glaciers,' first series.) At such seasons it is a better plan to cross the glacier higher up, and descend by the rocks on the l. bank, which are decidedly less diffi-

cult. When the level of the glacier below the middle ice-fall has been attained, the difficulties of the expedition are over. Passing by the Bänisegg châlet on the rt. bank, the remainder of the descent lies by the ordinary track frequented by the tourists from Grindelwald who visit the so-called Eis-meer. (See Rte. B.) From 5 to 5½ hrs., exclusive of halts, are required for the descent from the summit of the pass to the village.

The *Ascent of the Schreckhorn* (13.394′) is one of the most laborious hitherto effected, and can be undertaken only by practised cragsmen. The first ascent was effected by an unusually long climb up very steep rocks. This involves no positive risk, unless it be the necessity of passing spots where disintegrated fragments of rock fall from time to time down the face of the precipice. It is well known to all travellers that the peak is one of the boldest and most forbidding in aspect among the summits of the Alps. On three sides the rocks are so steep as to be almost completely bare of snow; the N. slope towards the Lauteraar Joch alone shows a long slope of snow lying at the highest possible angle, and in such a condition that the slightest disturbance is apt to cause avalanches. The summit is a crescent-shaped ridge about 400 yards in length, convex towards the E., with the highest peak at the N. end, the projecting point at the S. extremity, called Gross Lauteraarhorn by the Hasli guides, and Desorhorn by others, being 91 ft. lower than the other. The latter was reached in 1842 by MM. Desor, Escher v. der Linth, and Girard, with five guides. The ascent was made by the second lateral glacier—that nearest to the Schreckhorn—passed on the right hand in the ascent from the Abschwung to the Strahleck, and the descent by the steep rocks on the rt. bank of the same lateral glacier. The rocks on that side appear to be less steep than the SW. face; but a gap in the arête near the top, involving a sheer descent of about 10 ft., is somewhat troublesome. The arête appeared so perilously narrow that the first explorers renounced the attempt to reach the higher peak, but this has been accomplished in subsequent expeditions. An attempt to reach the highest peak from the N. side, recounted by Mr. Anderson in the first series of 'Peaks, Passes, and Glaciers,' encountered formidable obstacles. After a narrow escape from being swept into a bergschrund by a snow-avalanche, that gentleman and his guides reached the peak of the Lesser Schreckhorn, lying between the greater peak and the Mettenberg. In the second series of the same work Mr. Leslie Stephen has given an account of the first ascent of the highest peak, effected by himself in 1861, with Christian and Peter Michel, and C. Kaufmann, as guides. Having passed the preceding night in a small cave near the NW. base of the Strahleck, they mounted the secondary glacier to the base of the great wall which forms the peak. Thenceforward the ascent was an arduous piece of rock-climbing, lasting without intermission for 4½ hrs., chiefly along the SE. side of a narrow and very steep gorge, or furrow in the face of the precipice. In this way the highest ridge was gained at a point very near the actual summit, which is a small but level platform of rock. Owing to the extreme steepness of the rocks, the descent occupied very nearly the same time as the ascent; and nothing can better show the arduous character of the ascent than the fact that so active a mountaineer as Mr. Stephen should have employed 15 hrs., with little cessation save one hour passed on the summit, in going and returning from the cave—probably the same called Kastenstein by the Grindelwald guides. It appears that more than one such cave, near the foot of the Strahleck, is occasionally made use of as a sleeping-place by guides or chamois-hunters. The second ascent in 1864 was made by MM. Fellenberg, Aebi, and Gerwer. They employed 16 hrs. in

going from and returning to the station chosen for their bivouac.

2. *By the Finsteraar Joch.*—Before the completion of the Swiss Federal Map, it was generally supposed that the ridge of the Mittelgrat, which divides longitudinally the upper basin of the Finsteraar Glacier, was connected by a transverse ridge with the Finsteraarhorn, as it undoubtedly is with the Schreckhorn. The view from the summit of the Strahleck is too limited to settle the question; but the few travellers who reached the peaks overlooking the Finsteraar Glacier perceived that it was not separated by any rocky barrier from the Lower Grindelwald Glacier.

Tradition asserts the early existence of a pass in this direction, connecting the Grimsel with Grindelwald; and some of the more experienced guides asserted that it lay altogether over glacier by the S. side of the Mittelgrat; while others believed that it was carried across the latter ridge, SE. of the present Strahleck Pass. The doubts on this subject were not set to rest until the summer of 1862, when Mr. H. B. George effected, with Christian Almer, the passage over what he has called Finsteraar Joch, and proved the fact that the Lower Grindelwald and Finsteraar Glaciers originate in one and the same plateau of névé which forms the summit of this pass.

Not knowing what amount of difficulties they might encounter, the above-named traveller and his guide slept at the Kastenstein cave, and started at 5 A.M. on the following morning. At the point where, in going to the Strahleck, it is necessary to turn to the l., they went straight on towards the upper ice-fall. This is, however, so much broken up by crevasses, that it was found expedient to continue the ascent along the steep slope of the Mittelgrat or Strahlgrat. About 1 hr. was expended in climbing one of the rocky ribs that rise from the rt. bank of the ice-fall. Bearing to the rt., or SE., they next crossed a secondary glacier, and then another sharp ridge of rock, whence an awkward scramble led them to a snow-slope that falls on the rt. towards the head of the glacier. They were here 'on a level with the head of the ice-fall, but distant from it by an hour's diagonal march along the face of the slope that rose pretty steeply on the left.' The plateau which forms the common source of the two glaciers was reached in 4½ hrs. from the Kastenstein. 'The first part of the descent is very easy, skirting closely the end of the Strahlgrat; but after some little distance it is necessary to cross the glacier, and then round the lower ice-fall very close under the Finsteraarhorn. About this place of crossing the crevasses are rather troublesome, but nothing to perplex a good guide; and the whole descent on to the familiar part of the Finsteraar Glacier only occupied 1 hr. 20 m.'—[H. B. G.]

The new pass usually requires rather more time than the Strahleck. As the latter is best taken from the E. side, and the other in the opposite direction, the Finsteraar Joch may be recommended to travellers going from Grindelwald to the Grimsel. The view of the Finsteraarhorn is finer by the new route; but the ascent of the ice-wall, and the grand view of the Schreckhorn, will always attract mountaineers to the Strahleck. On 23 Dec., 1866, Messrs. A. W. Moore and H. Walker, with three first-rate guides, started from Grindelwald, crossed the Finsteraar Joch, and returned by the Strahleck, within 22 hrs.

3. *By the Lauteraar Joch.*—From 15 to 17 hrs., exclusive of halts. The two preceding passes lead from the basin of the lower Grindelwald Glacier to that of the Finsteraar. A glance at the map shows that a route between the Grimsel and Grindelwald, no longer in actual distance, must lie on the N. side of the Schreckhorn, provided it be possible to reach the head of the Upper Grindelwald Glacier, and to cross the ridge which separates it from the Lauteraar branch of the Unteraar Glacier.

The *Ober Grindelwald Glacier*, however, whether seen from the neighbourhood of the village, from the Faulhorn, or from any other commanding spot, presents an aspect which may well make the boldest mountaineer hesitate as to the possibility of attaining the ridge linking the Schreckhorn with the Berglistock. The glacier is, in truth, an almost continuous ice-fall, torn by wide crevasses into toppling ridges and pinnacles of ice; and although in 1868 Mr. G. E. Forster, with Hans Baumann, succeeded in forcing their way down the glacier from the summit to a point below the Gleckstein, this will generally be found to cost more time than can be spared. When the eye turns from the glacier to the mountains on either side, with the hope of tracing a passage, the prospect is at first sight even more discouraging. The precipices of the Wetterhörner on the one side, those of the Mettenberg on the other, rise in walls of rock so steep, and seemingly so unbroken, that it is hard to conceive how even a chamois could make its way along them. The experienced cragsman knows that the steepest rocks are almost always broken by ravines and gullies, and traversed by narrow ledges that give foot-hold to the skilful climber; but if it had not happened that the chamois-hunters and shepherds of Grindelwald had already found and made for themselves a path up the more difficult part of the ascent, it is probable that the pass of the Lauteraar Joch would still remain an unsolved problem for mountaineers. The practicability of traversing the ridge forming the actual col was ascertained by the guides Bannholzer and Jaun in 1844, when they returned by that route to the Grimsel, after effecting the ascent of the Wetterhorn. The possibility of reaching the pass from Grindelwald was not established till 1857, when it was traversed by Dr. Porges, Capt. Campbell, and M. Stern, with Christian Almer and Ulrich Kaufmann as guides. It has been since described by Mr. G. Studer in the second series of 'Berg- und Gletscher-Fahrten,' and by many others.

The pass is usually taken from the Grindelwald side, passing the night under some rocks on the SW. side of the Wetterhörner. The way is now shortened and improved, and though this must always be reckoned as a difficult pass, a traveller with a first rate Grindelwald guide may quite safely undertake it from either side. Starting from Grindelwald, he may sleep at the Pavillon. Though lower than the Strahleck, it requires more time, and on the whole must be counted as more difficult. The scenery of the Lauteraar Glacier is not equal to that of the Finsteraar; but the passage along the rocks, above the Ober-Grindelwald Glacier, must be reckoned amongst the most striking expeditions in the Alps.

The distance from Grindelwald to the new hut erected above the Gleckstein may be counted as 4½ hrs.' steady walking; but as the ascent is steep, and some time is required to search for firewood on the way, it is advisable to start early in the afternoon. A porter should be taken to carry the needful wraps for the night, with other necessaries. He can return with these to Grindelwald on the following morning. After passing the base of the Upper Glacier by the usual path leading to the Great Scheidegg, a track turns to the rt. up the grass-grown slopes below the rocks which form the base of the Wetterhorn range. This soon becomes a mere goat's path. After a stiff climb up the lower slopes, the way lies along a narrow ledge called the Enge, on the face of a limestone precipice. This comes to an end on the projecting ridge forming the angle between the N. and W. faces of the mountain, where a small plateau invites the traveller to halt after 2½ hrs.' walk from his starting-point. The view, extending on the one side over

the valley of Grindelwald, on the other to the precipices of the Mettenberg and the Little Schreckhorn, with the glacier lying at a great depth below him, riven by countless chasms into shattered masses of ice, is already extremely grand. This being the limit of tree vegetation, the guides lay in a store of firewood for use at the bivouac higher up. On looking to the l. in the direction whither the ascent must be continued, it is impossible to guess how the vertical precipices that descend from the Wetterhorn towards the glacier can give a passage to human foot. The faintly-marked track is carried along steep slopes beneath an upper ledge of vertical rocks. After crossing a torrent descending from some upper shelf of glacier, a steep slope of slippery rock is made passable by slight notches cut in the surface by a chamois-hunter, who once made this his favourite resort. On attaining the Schönenbuhl, a small green terrace perched on a ledge of the mountain which commands a wonderfully fine view of the upper ice-fall, the traveller's doubts are solved by the opening of a narrow and steep ravine on the left, down which falls in a succession of cascades a brawling torrent from the masses of glacier that crown the rocks overhead. The somewhat troublesome and circuitous climb, hitherto necessary to reach the upper terrace of the mountain, will hereafter be avoided by ladders fixed against the vertical rock, by which the traveller may in 15 or 20 min. attain a small shelf of alpine pasture, surrounded on all sides by precipices, where some sheep are led every summer, and left without human care to pick up a subsistence. Here is the place of shelter called the *Gleckstein*, formed by two huge blocks which have fallen together, whither the hunters and few travellers who pass this way have resorted for shelter for the night. A small hut, built a little higher up than the Gleckstein, will henceforward supply travellers with better protection from the weather. It is advisable to start the next morning as soon as daylight makes it safe to do so.

The next step in the ascent is to attain a plateau of glacier that lies on the shelf of the mountain above the precipices. The climb is steep and pathless, but not difficult. In about 20 min. from the Gleckstein the upper glacier is attained at a point where it is nearly level. It appears from the testimony of guides, and the accounts of the above-named travellers, that the upper basin of the glacier has undergone considerable changes within the last few years. While no very serious obstacles have been encountered, there is enough of difficulty to require the aid of an experienced guide. The course now commonly followed is to ascend a rather long and steep ice-slope, lying to the left, which takes about 1 hr. when the névé is hard frozen. At the summit the course to the Lauteraarjoch lies to the rt., without much further ascent, while by bearing to the l. the couloir (mentioned below) is reached, which serves for the ascent of the Wetterhorn. On attaining the upper level of the névé, the most striking object in view is the peak of the Schreckhorn, to the rt. of which is the *Lesser Schreckhorn* (11,473′), first ascended from this side in 1857 by Mr. Anderson, after being repulsed by avalanches from an attempt on the greater peak. Nearer at hand is the *Berglistock*, which, according to recent measurements, attains 11,998 ft. Its outline is less bold than that of the neighbouring summits, but it shows on this side a range of steep crags. The summit has been reached without much difficulty in 2 hrs. from the top of the pass. The view is very interesting, as it is the central point from whence radiate four great glaciers — those of the Lauteraar, Ober Grindelwald, Gauli, and Rosenlaui. The Schreckhorn and the Berglistock are connected by a low dyke, or rocky ridge, in great part covered with snow, forming the

Lauteraar Joch. The lowest point in this ridge, 10,354 ft. in height, lies some way to the right, and is difficult, if not impossible, of access, owing to the crevassed condition of the glacier. The passage is effected at a point nearer to the Berglistock, the exact height of which does not seem to have been measured, but G. Studer's estimate of 3,250 mètres, or 10,663 ft., is probably not far from the truth.

Though the ridge dividing the two glaciers rises but about 150 ft. above the level of the névé on either side, it is so steep as to present some difficulty, especially in the descent to the Lauteraar Gl., where its base is sometimes defended by a bergschrund.

The summit of the pass was reached in about 6½ hrs. from the sleeping-place in both the earlier ascents; but from 4 to 5 hrs. suffice when the snow is in good condition. The descent, by rocks that become gradually steeper as they approach the glacier, is always steep, and becomes very difficult late in the season when the glacier has subsided. When the névé of the Lauteraar has been attained, the difficulties of the pass are over; but a long stretch of glacier remains to be traversed, and from 6 to 7 hrs. must be allowed for the descent to the Grimsel. The upper end of the Lauteraar Glacier is much crevassed, but the difficulties are avoided by bearing to the l., and in the steepest part a bare stony slope on that bank facilitates the descent. In about 2½ hrs. the junction of the Lauteraar and Finsteraar branches of the glacier is reached opposite the Abschwung, where this route joins that of the Strahleck. Those who cross the Lauteraar Joch in fine weather may well halt at the Pavillon on the l. bank of the glacier, and return on the following day to Grindelwald by the Strahleck, thus enjoying with a very moderate amount of labour a continued succession of grand scenery, such as can scarcely be equalled elsewhere in the Alps.

Ascent of the Wetterhörner.—The three peaks collectively called *Wetterhörner*, being most commonly approached from the Gleckstein sleeping-place, used in the passage of the Lauteraar Joch, may best be described in connection with that pass. The well-known summit, 12,149 ft in height, commonly called *Wetterhorn*, also known in the neighbourhood of Meyringen as the *Hasli Jungfrau*, is crowned by that beautifully sharp snow pyramid which is so conspicuous in most of the views of the Bernese Alps. This outer or NW. peak is succeeded by the *Mittelhorn* (12,166′); although a few ft. higher than its neighbours, it is concealed by them from most points of view. The SE. summit is the *Rosenhorn* (12,107′). The two last-named peaks rise out of a plateau, aptly called by M. Roth *Wettereismeer*, which extends eastward to the Renferhorn, feeding on one side the Gauli Glacier, while its chief outflow goes to the Rosenlaui Glacier. The col between the Wetterhorn proper and the Mittelhorn, which may be called *Wetter Joch*, overlooks the névé of the Ober Schwarzwald Glacier, which is cut off from the Wettereismeer by a ridge connecting the Mittelhorn with the Wellhorn. This ridge has been crossed without difficulty near the base of the Mittelhorn, in ascending the Wetterhorn from Rosenlaui.

The Rosenhorn was ascended in 1844 by M. Desor, the first traveller who has given a correct account of this portion of the range, with two companions and several guides. The outer peak appears to have been reached in 1843 by MM. Agassiz, Bovet, and Vogt, with the guides Jaun and Bannholzer, and again by the same guides in the following year; but doubts as to the accessibility of the Wetterhorn proper continued to exist until they were finally removed by Mr. A. Wills, who has given a very interesting account of his ascent in his 'Wanderings among the High Alps.'

Starting from Grindelwald with Ulrich Lauener, Auguste Balmat, and

another guide, he slept at the Gleckstein, and thence mounted by a steep but not difficult rocky slope to the col or depression between the middle and the outer peak, for which we have proposed the designation Wetter Joch. The summit of the Wetterhorn rises little more than 800 ft. above this col, but the slope is so extremely steep that from 1 to 2 hours must be allowed for the ascent, according to the condition of the snow. The slope increases from about 50° to 58° towards the summit. This consists of a perilously sharp crest of frozen snow, running for a short distance N. and S., which, when reached by Mr. Wills, was topped by an overhanging cornice of ice that had to be cleft by the powerful arm of Ulrich Lauener. It is only by levelling the summit with the axe that space enough for a seat can be found on this dizzy eminence. The view downward upon the Great Scheidegg and the green slopes leading to Grindelwald is almost unique of its kind. The Wettereismeer to the East, and the Upper Grindelwald Glacier to the S. and W., are seen backed by many a snowy peak, but the most remarkable object is that 'grimmest fiend of the Oberland'– the Schreckhorn. To the NE., between the summit and the Wellhorn, is the Upper Schwarzwald Glacier, which from time to time rolls down its toppling masses of ice to startle the tourists on their way from Rosenlaui to the Great Scheidegg.

The ascent has been frequently repeated from the side of Grindelwald. In some states of the snow it seems better to ascend to the plateau by a couloir lying some way SE. of the way by the rocks usually chosen. In 1860, Dr. Roth, of Berne, with the three brothers Blatter, of Meyringen, reached the summit from Rosenlaui, by way of the Rosenlaui Glacier and the Wettereismeer. As there is some real danger in descending the steep ice-slope of the Rosenlaui Glacier in the afternoon (see Rte. L), those who ascend that way should descend to Grindelwald or to the Urner Alp, avoiding the dangerous spot in the ascent from Rosenlaui. The editor is assured by the Rev. A. G. Girdlestone, who has ascended both ways without guides, that the easiest, though not the most interesting, way to the Wetterhorn is by the Gauli Glacier, sleeping at the Urner Alp (Rte. M).

In 1868, Mr. Morshead, with Chr. Almer and his son, ascended direct from the Scheidegg track to a notch in the Wetterhorn ridge seen from below, and attained the summit in little more than 6 hrs. from Grindelwald. The grass slopes are so steep that it was thought unsafe to return the same way.

The Mittelhorn and Rosenhorn are both easier of access than the outer Wetterhorn; but as the view is less interesting, they are rarely ascended. The outer summit is formed of limestone, and the limit between this and the gneiss forming the inner peaks lies in the snow-covered depression between them.

Route L.

ROSENLAUI TO MEYRINGEN, BY THE URBACHTHAL AND WEITSATTEL.

10 to 11 hrs., exclusive of halts.

Of the many travellers who constantly traverse the valley of Hasli between Meyringen and the Grimsel (Rte. B), very few are aware that the stream descending from the SW. through a comparatively narrow opening into the basin of Im Grund, drains a considerable valley, abounding in grand scenery, whose upper end is occupied by an extensive glacier.

The *Urbachthal*, as this secluded valley is called, deserves far more attention than it has yet received, and adventurous mountaineers will find quite enough of excitement in the passes indicated in this and the following rtes. The first traveller known to

have visited the valley was Hugi, followed by M. Desor and his companions in 1844. More recently, several English mountaineers have traversed the Gauli Pass (Rte. N), lying at the head of the Gauli Glacier, as well as the Weitsattel Pass here noticed.

As the pass here pointed out is sometimes difficult on the N. side, and the distance rather considerable, it is a better plan to take it from Rosenlaui than from the Haslithal If the opposite course be preferred, it is advisable to sleep at Hof (Rte. C), which is fully 1 hr. nearer than Meyringen. The way is known to several of the Grindelwald guides, and to H. Kohler and Hans Schilt, who are both good Rosenlaui guides. The scenery of the Urbachthal, as the traveller passes beneath the precipices of the Hangendhorn and the fine peaks of the Rizlihorn, is of the grandest character.

The *Rosenlaui Glacier* descends from the Wettereismeer (Rte. K), at first NE., bending at its lower end nearly due N. between the ridge terminating in the well-known peak of the Wellhorn on the W., and a much longer range to the E., whose chief summits are the Engelhörner (whose S. peak is the Stellihorn), Tossenhorn, Renferhorn, and Berglistock. The interval between the two last-named peaks forms part of the plateau of the Wettereismeer, and seems to be easily accessible from the head of the Gauli Glacier. But to reach the Urbachthal by that route from Rosenlaui would involve a long détour. A much shorter, though not very easy, way is found by crossing the ridge between the Stellihorn and the Tossenhorn. The very steep rocks of the Engelhörner, both on the side of Rosenlaui and that of the Urbachthal, are ill-famed in this district for the accidents with which they are charged. Many a chamois-hunter and herdsman is said to have lost his life on their precipitous slopes. Whether on this account, or, as some say, because the spot has become more difficult owing to avalanches, the guides of late years have refused to lead travellers by the Böse Tritt, which afforded a direct way to the summit of the ridge by the rocky slopes above the rt. bank of the Rosenlaui Glacier. In reaching the pass by way of the Glacier, another form of risk presents itself in the shape of detached blocks of stone that come bounding down an ice-slope, as mentioned in the last rte. The danger is much lessened by a very early start from Rosenlaui, and may be further diminished by a judicious choice of route over the glacier. A steep ascent of 1 hr. by the slopes above the rt. bank enables the traveller to surmount the lowest ice-fall. Another hr., partly on the ice, partly on moraine, leads to the base of a projecting buttress of the Stellihorn which encounters the middle ice-fall. To turn this obstacle requires ½ hr. of rather troublesome ice-work, and then an ascent of ¼ hr. leads to the base of a range of rocks seamed with snow, high and steep enough to be exciting. There are not many passes of such moderate height so difficult as this.

The *Weitsattel*, 8,362 ft. in height, according to Mr. Jacomb's observations, is reached in from 3 to 4 hrs. from Rosenlaui. The small *Renfen Glacier* descends eastward from a hollow between the Tossenhorn and Renferhorn; and on its southern side the Hangendhorn projects to the E. and separates it from the vast stream of the Gauli Glacier. In less than an hour the traveller descends from the Weitsattel to the Jowardli Alp, the highest châlet in this part of the Urbachthal. The best course from hence is apparently to descend directly to the level of the Urbach torrent, flowing from the Gauli Glacier, which is crossed opposite to the *Schrättern Alp* (4,473′—F. W. J.), the chief group of châlets in the upper part of the Urbachthal. A beaten track leads thence along the right bank of the valley to the hamlet of *Ilmenstein*, lying in the flat plain, bounded abruptly by steep mountains, that occupies the lower end of the

valley. Crossing to the left bank, the path leads to a point where it overlooks the green basin of Im Grund. The traveller bound for Hof may descend directly into the valley; another track bears to the l., leading to the Kirchet, and to Reichenbach or Meyringen. In descending from the Weitsattel, the traveller who intends to cross either of the passes described in the next rtes. should not descend to the Schrättern Alp. After passing below the end of the Renfen Glacier, a path bearing to the rt. along a buttress of the Hangendhorn joins that leading to the Urner Alp, noticed in next Rte.

Route M.

MEYRINGEN TO GRINDELWALD, BY THE BERGLI JOCH.

18 to 19 hrs., exclusive of halts.

The course here pointed out was traversed in part by M. Desor and his companions in the ascent of the Rosenhorn in 1844. The pass from the Urbachthal to Grindelwald was, however, accomplished for the first time in 1863 by Mr. F. W. Jacomb, with Christian Michel of Grindelwald, and J. Zwalt of Guttanen, as guides. In a notice in the Alpine Journal (p. 198), Mr. Jacomb has called this the Ober Grindelwald Joch; but he has since selected the more appropriate designation Bergli Joch, which is here given to it. As the distance is decidedly too great for one day's walk, it is advisable to sleep at the châlets of the Urner Alp, the highest on the l. bank of the Gauli Glacier. These are reached by way of the Schrättern Alp (see last Rte.). S. of the latter is the end of the Gauli Glacier, which descends from the upper plateau at the head of the valley in an ice-fall, being at the same time bent from its direct course by a steep projecting buttress of the Hangendhorn. The best, if not the only, way to reach the upper plateau is to cross the Urbach opposite the Schrättern Alp, and mount by a zig-zag path the northern declivity of the above-mentioned buttress, joining on the way the track leading from the Weitsattel to the head of the valley. In $1\frac{3}{4}$ hr. the summit of the ascent, marked by three piles of stones (*Steinmänner*), is attained, and a descent of $\frac{1}{2}$ hr., in all 6 hrs. from Meyringen, leads to the *Urner Alp* (7,023′ F. W. J.), where rough shelter for the night may be obtained.

From the châlets the ascent is continued by the slopes on the W. side of the glacier, the correct way being indicated by a pile of stones, or *steinmann*, about $\frac{1}{2}$ hr. above the Alp. The remainder of the route is thus described by Mr. Jacomb:—

'We left the Urner Alp at 5.15 A.M. and ascended the slopes of the Hangendhorn, SW., above the left bank of the *Gauli Glacier*, to a point nearly opposite the Gauli Pass (Rte. N). We arrived there at 6.50 A.M., and, after a few minutes' halt in order to take some levels, descended to the Glacier, which we reached at 7.15 A.M. The amphitheatre forming the head of the Glacier was guarded (commencing from the left hand) by the Schneehorn, Berglistock, Rosenhorn, Tossenhorn, and Hangendhorn. From the known position of the Upper Grindelwald Glacier, we conceived it lay on the farther side of a snow col, which we could see between the Berglistock and the Rosenhorn; so we struck straight up the Glacier towards it. At 8.15 A.M. we halted for the second breakfast under a rocky spur of the Hangendhorn. Resuming at 8.45 A.M., we passed up easy snow-slopes, none of which, as measured by my clinometer, exceeded 40°, and, at 10.45 A.M., reached the col. Its height, as deduced from my boiling-water apparatus, aneroid and a level, is 10,939 feet. In order to

obtain a more extended view, I ascended the Rosenhorn, the summit of which is reached in 1 hr. from the col. As the inner peak of the Wetterhörner, the position of the Rosenhorn commands a wide range of view, especially NE. and N.W., in which directions the Lakes of Thun, Lungern, and Lucerne are intermingled with chain after chain of mountains. To the S., the Schreckhorn forms a magnificent object. Returning to the col, which may appropriately be named *Bergli Joch*, we left it at 1.15 P.M. and commenced descending its farther side on to the head of the Upper Grindelwald Glacier. In some parts we experienced considerable difficulty, and were glad to avail ourselves of a rib of crumbling rock which obligingly cropped out at intervals. One slope of hard ice measured 43° by my clinometer, and it occupied us 45 min. in cutting our way down it. At 4.10 P.M. we left the Glacier, and, at 4.40, joined the route from the Wetterhorn at the well-known stone used for the night bivouac in ascending that mountain. (See Rte. K.) After a halt for refreshment, we followed the Wetterhorn track and its teasing (at the close of a day) rock-descent to Grindelwald, where we arrived at 9 P.M.'—[F.W. J.]

In the Alpine Journal Mr. Jacomb has proposed the name *Mittel Joch* (11,495′—F.W.J.) for the Col between the Mittelhorn and Rosenhorn, crossed (probably for the first time) by Mr. A. Whately in 1857.

Route N.

MEYRINGEN TO THE GRIMSEL, BY THE GAULI PASS.

15 hrs., exclusive of halts.

As this is a very long day's expedition, it is best to sleep at Hof, or else at some of the châlets in the Urbachthal. The entire distance from Meyringen was, however, accomplished in one day by Professor Tyndall. In taking the pass from the Grimsel, from 1 to 2 hrs. are gained, owing to the difference of level between that station and Meyringen.

For some distance beyond the Urner Alp, the way followed is the same as that to the Bergli Joch, described in the last Rte. After ascending for rather less than 1 hr. from the châlets, it is expedient to descend to the *Gauli Glacier*, and cross nearly to its opposite bank, below the upper ice-fall, descending from the nearly level ridge connecting the Berglistock and the Schneehorn. The pass lies at the end of this ridge nearest the latter mountain. The difficulties of the ascent are in great part avoided by keeping near the SE. side of the glacier, ascending alternately over ice, moraine, and névé, till the base of the highest ridge forming the boundary between the Gauli and Lauteraar Glaciers is attained. A slight indentation to the l. marks the position of the pass. A bergschrund sometimes renders the final ascent rather difficult.

The exact position of the *Gauli Pass* (1,0743′, Schlagintweit; 10,501′, Jacomb) is not very well defined, and it is clear that travellers have not always crossed the ridge at the same point. The *Schneehorn*, sometimes called Ewigeschneehorn, is close at hand, and not more than 500 ft. higher than the pass. The summit, which has been repeatedly reached, is easy of access from the col, and commands a wider view, especially towards the E. The descent to the Lauteraar Glacier is steep. Some travellers have kept to the rocks, others have passed by some one of several snow couloirs that furrow the precipitous slope. The level of the Lauteraar Gl. is reached nearly 1 hr. above the Abschwung, or from 4 to 4½ hrs. from the Grimsel.

The travellers who have sought to accomplish a glacier route from the Grimsel to Rosenlaui, have all descended from the Gauli Pass to the Urner Alp, and then reached the Weitsattel by the circuitous track noticed

in Rte. L. The Rev. Leslie Stephen, probably the only traveller who has accomplished the whole distance in a single day, pointed out that a shorter passage might be effected by keeping from the Gauli Pass along the snow-slopes by the E. side of the Berglistock, crossing the ridge between this and the Renferhorn, and so reaching the Wettereismeer. The Hon. R. Noel has given, in the 'Alpine Journal' for May 1869, an account of the *Renfer Joch*, as this pass may be called; but owing to the lateness of the season he was unable to follow the direct course from Rosenlaui to the Wettereismeer, or to cross the ridge at the most favourable point.

The *Rizlihorn* (10,774′), the highest point in the range dividing the Urbachthal from the Haslithal, is best ascended from the former valley. Starting from the châlets of Matten, Mr. Sowerby reached the top in $5\frac{1}{4}$ hrs. by a steep but not difficult climb. The view is very interesting.

Route O.

GRIMSEL TO THE ÆGGISCHHORN.—ASCENT OF THE OBERAARHORN.

The pass of the Oberaar Joch, leading from the Grimsel to Viesch, or the Æggischhorn, by the Oberaar and Viesch Glaciers, has been known since 1842, when it was traversed by M. G. Studer and his companions on their return to the Grimsel from the ascent of the Jungfrau. Two new and more difficult passes effected by recent travellers are noticed below.

1. *By the Oberaar Joch.*—12 to 13 hrs., exclusive of halts. This pass is as often made from the Grimsel as from the Æggischhorn, but in the former case local knowledge on the part of the guides is of essential importance. Practised mountaineers will not have much difficulty in effecting the ascent by the Viesch Glacier, but a party not well acquainted with the ground might encounter very serious difficulties in attempting the descent on the side of Viesch. In either case an early start is advisable. If the snow be in good condition, an active mountaineer may find time for the ascent of the Oberaarhorn on his way.

In going from the Grimsel to the Oberaar Glacier, some persons follow the path to the foot of the Unteraar Gl., and then mount the very rough path along the Oberaar torrent. This may be the best plan for those who start before daylight, as the first hour is by a comparatively good track, but in general the way by the Trübten See, on the N. side of the Sidelhorn (Rte. C), is to be preferred. The ascent of the *Oberaar Glacier* is free from difficulty, the crevasses being few and easily avoided. They are wider and more numerous towards the upper end, but usually well bridged over, and with the rope there is no difficulty that need delay progress, unless it be that the snow often lies deep. The summit of the *Oberaar Joch* (10,624′), a small plateau of névé at the very base of the Oberaarhorn, is reached in $5\frac{1}{2}$ or 6 hrs. from the Grimsel. Travelling in the opposite direction, 4 or $4\frac{1}{2}$ hrs. suffice to traverse the same distance. Throughout the ascent the snowy peak of the *Oberaarhorn* (11,923′) is the most conspicuous object in view. 'The summit is easily reached from the top of the Oberaar Joch. A uniform snow-slope leads straight to the top in about $1\frac{1}{2}$ hr. It is a very fine point of view. The cliffs of the Finsteraarhorn and the Schreckhorn are very grand from this point.'—[L.S.]

For some distance the descent towards the Viesch Glacier is by a gentle slope of névé. To the right is a snow-basin enclosed between the Oberaarhorn, Studerhorn, Finsteraarhorn, and *Rothhorn* (11,644′). The latter peak, snow-clad on its N. slope, but presenting a bold rocky front to the S., divides the main branch of the Viesch Glacier, descending from the Viescherhörner

and the Finsteraarhorn (see Viescherjoch, Rte. I), from the lesser branch by which the traveller passes from the Oberaarjoch. In the narrow strait between the Rothhorn and the *Hinter Galmi* (11,595′) the névé is much crevassed, and some time is usually consumed in seeking a passage. On reaching the junction of the two ice-streams at the base of the Rothhorn, the main channel of the Viesch Glacier is easily traversed. According to the condition of the ice, the descent is continued for a longer or shorter distance by the glacier: but it almost always becomes necessary to take to the slopes on the rt. bank, where some half-wild sheep are left to pick up a subsistence during the summer. At a point immediately above the most crevassed part of the glacier, the rocks on the rt. bank become extremely steep, and it is necessary to descend a sort of gully which is at the same time the channel of a rivulet. This may sometimes be avoided by keeping along the glacier. A short way below this point, now well known to most of the Oberland guides, it is usual to return to the glacier just above a rather sharp turn of the ice-stream, which, after flowing S.W., descends nearly due S. to the Viescher-tobel, the lower part of its course being an impassable ice-fall. At the bend of the glacier travellers sometimes cross to the E. bank, and descend some way by the grass slopes on that side, returning immediately to the opposite bank near the châlets of Stock. Here three paths present themselves to the traveller. One ascends rapidly on the rt. to the Märjelen Hütten (Rte. P); another is carried down along the ice-fall, and leads to Viesch by a rather long and fatiguing descent of more than 3,000 ft. Between these two tracks is an intermediate path leading directly to the hotel, along the E. slopes of the Æggischhorn—about 7 hrs. from the col—but it is so ill-marked that those who attempt to find their way after night-fall usually go astray. On this account travellers do well to start very early when they make this pass from the Grimsel.

2. *By the Studer Joch.*—14 to 15 hrs., exclusive of halts.

This difficult pass was planned by Mr. Macdonald, and traversed in August 1863 by that gentleman, with Messrs. E. Buxton, Grove, and W. E. Hall, with Melchior Anderegg and Peter Perrn as guides. The distance may be shortened by fully 2 hrs. by sleeping at the Pavillon on the Aar Glacier instead of the Grimsel. The pass lies between the Oberaarhorn and the equally high summit of the *Studerhorn* (11,916′), but close under the latter. The name was given by M. Agassiz to the principal peak in the ridge connecting the Oberaarhorn and Finsteraarhorn, in honour of Prof. B. Studer, the eminent Swiss geologist. The association of the same name with this pass will also serve to recall the labours of M. G. Studer, so highly appreciated by all Alpine travellers.

The following notes are by Mr W. E. Hall:—'We started from the Grimsel at 3.15 A.M., and followed the Strahleck route to where two glaciers debouch from the east into that of the Finsteraar, the one coming down from the Oberaarhorn, the other from the ridge between that mountain and the Studerhorn. Bending to the left, we kept up the more westerly branch of the latter, and mounted a very steep snow-slope to near the crest, where the inclination becomes so great that the snow breaks into very intricate cliffs. In passing these we found considerable difficulties. The summit of the pass is a snow-slope curving over rocks that fall towards the upper névé of the Viesch Glacier. Immediately below the pass these are quite impracticable, but about 300 yds. to the E. the snow of the upper level falls through a couloir nearly meeting the névé of the Upper Viesch Gl., which rises into a recess at the base of the rocks. The rocks between the base of the upper snow-couloir and the névé below were, however, so difficult that an hour was

consumed in the descent. A short way below the base of the rocks the route of the Oberaarjoch was joined on the W. side of the pass.'—[W. E. H.] This is a very fine pass, but more difficult than either the Strahleck or the Oberaarjoch.

3. *By the Unteraar Joch.* 15 to 16 hrs.

This name has been given to a new pass effected in 1868 by Mr. A. G. Puller, with A. Mennich and Andreas Jaun as guides, rather longer, but decidedly easier than the Studer Joch. It lies W. of the Studerhorn, and a little above the lowest point in the ridge connecting that peak with the Finsteraarhorn. Descending without much difficulty to the head of the Studerfirn, Mr. Puller bore to the right, and easily reached the col between the Rothhorn and Finsteraarhorn (*Rothsattel* of Hugi). Then traversing the main branch of the Viesch Gl., he crossed the Grünhorn Lücke (Rte. D), and reached the Æggischhorn by the Aletsch Gl. in 14 hrs., excluding halts, from the Pavillon.

Route P.

BERNE TO LUCERNE, BY THE ENTLEBUCH.

	Post stunden	Eng. miles
Langnau (by railway) .	6½	19½
Escholzmatt (by road)	3¾	11¼
Entlebuch . . .	3	9
Schächen . . .	3	9
Lucerne . . .	3¼	9¾
	19½	58½

Railway in progress, open to Langnau. Post road thence to Lucerne. Diligence daily.

Having described, in the preceding routes, the group of high mountains dividing the basin of the Rhone from that of the Aar and properly bearing the name Bernese Oberland, it seems desirable to add a slight notice of the mountain country N. of the lakes of Thun and Brienz, which is orographically connected with the Oberland, inasmuch as the ridges seem to represent the lesser undulations of the great disturbances by which the main mass has been uplifted. The district traversed by the road here described gives the stranger a lively impression of the characteristics of the more prosperous pastoral districts of Switzerland, where the people enjoy a comparative immunity from the effects of storm and avalanche, that render the life of the inhabitants of the higher valleys one continued struggle against these restless enemies of human industry. The traces of activity and comfort apparent throughout this district, the neatness of the houses and the people, and the comfortable-looking inns found in almost every village, give the assurance that a part of the way, at least, may pleasantly be travelled on foot.

The railway, which will ultimately form a direct communication between Berne and Lucerne, is open only as far as Langnau. Three trains daily take 1½ hr. to travel less than 20 m.

The road from Berne leaves that leading to Thun on the rt., and traverses *Worb*, *Hochstetten* (Inn: Löwe), whence a road leads to Thun, about 12 m. distant, and *Signau* (Inn: Bär). Soon after the Emme is crossed by a bridge which commands a fine view of the Bernese Alps, and about 2 m. farther is the thriving country town of

Langnau (Inn: zum Emmenthal; Hirsch; both good country inns; Löwe), the chief place of the *Emmenthal*, famous for its cheeses, which are largely exported to all parts of Europe. The *Emme* rises on the N. side of the Brienzergrat and the mountains at the head of the Habkerenthal near Interlaken. A pedestrian may follow up the main branch of the valley to its source, cross a low pass to *Sörenberg* (neat inn), and take the Brienzer-Rothhorn (Rte. A) on his way to Brienz, but it is an easier way to reach Sörenberg from Schüpfheim. Beyond Langnau the road mounts gently for 10 m. along the Ilfis, a tributary of the Emme, to the boundary of the Cantons Berne and Lucerne. At *Trubschachen*, a path turns off to the l., leading NW.

by the village of Trub to the *Napf*, a mountain 5,194 ft. in height, much visited for the sake of the fine view of the Bernese and Unterwalden Alps enjoyed from the summit. A pedestrian making the détour may rejoin the road to Lucerne at Schüpfheim or Entlebuch. A short way beyond the boundary of Lucerne, the road reaches

Escholzmatt (Inns: Löwe, good; Krone), a large village, the highest in the *Entlebuch*. This name is given to the valley of the *Kleine Emme*, which joins the Reuss near Lucerne; not to be confounded with the greater stream above mentioned, whose junction with the Aar is near Soleure. In few parts of Switzerland have the inhabitants so well preserved their primitive character, manners, and customs, as in the Entlebuch. *Schwingfeste*, or popular festivities, wherein take place trials of strength and skill in wrestling, &c., are held annually on the 29th June, the second and fourth Sundays in August, the first Sunday in September, Michaelmas day, and the Sunday next following, at places appointed for the purpose. A stranger finding himself in the neighbourhood will do well to visit one of these meetings, and thus gain a view of Switzerland as it was before the age of railways and steamboats.

About 5 m. below Escholzmatt is *Schüpfheim* (Inns: Kreuz; Adler; Rössli), from whence the summit of the Napf (see above) may be reached in 3 or 4 hrs. Brienz may also be reached in 11 hrs. by Sörenberg and the Rothhorn (Rte. A). At the junction of the Entle torrent with the Kleine Emme, stands the picturesque village of

Entlebuch (Inns: zum Port; Drei Könige), the prettiest in the valley. [A track along the valley of the Entle will lead the pedestrian to Sarnen or to Alpnach (§ 25 Rte. A), in 6 or 7 hrs.]

The road to Lucerne follows a circuitous course round the base of the *Bramegg* (3,645′), a spur from the Pilatus range. The pedestrian may gain ¼ hr. and a beautiful view of the surrounding country, by following a rough char road over the low pass E. of the summit of the hill, about 3,281 ft. in height, and descending to Schachen by the Baths of *Farnbühl*. The high road passes *Wohlhausen*, where it joins the road from Willisau to Lucerne, and then turns sharply to E., to

Schachen (Inn: Rössli). A little farther on is Malters, where the men of Lucerne in 1845 defeated with severe loss the free corps under General Ochsenbein, in the brief but bloody struggle that arose out of the dispute as to the forcible expulsion of the Jesuits from Switzerland. The road passes through a rich and beautiful country at the N. base of the Pilatus before reaching LUCERNE (§ 26, Rte. A).

ROUTE Q.

INTERLAKEN TO BURGDORF, BY THE EMMENTHAL.

About 24 m. to Langnau, on foot—10½ m. by post-road thence to Burgdorf.

This is one of the most agreeable ways by which a pedestrian may vary his route to or from the Bernese Oberland, reaching the Burgdorf station on the central Swiss rly. (Rte. A) in one day from Interlaken.

The way lies through the wild and rugged valley of *Habkeren*, noticed in Rte. A among the excursions from Interlaken. In 2¼ hrs. the village of that name, where there is a good country inn, is reached from Interlaken by the new char-road. Here there is a choice of routes. A path over the E. end of the ridge of the Hohgant leads to Bumbach, the highest village in the Emmenthal; or by keeping still more to the E., and traversing the

ridge at the extreme end of the Habkerenthal, the traveller may reach Schüpfheim in the Entlebuch (Rte. P), by Sörenberg. The shortest way to the Emmenthal lies about due N. from Habkeren, and crosses the ridge of the *Grünenberg*, reached in 2 hrs. from the village. Immediately E. of the pass is the double peak of the Hohgant, which may be reached from thence in 2 hrs. A rather steep descent leads from the pass down to the Emmenthal, which is reached opposite to the village of Schangnau. The path along the l. bank of the Emme is followed to the Rebloch, where the stream has worked for itself a subterranean passage through the limestone rocks. At *Eggiwyl* the Röthenbach joins the Emme from the W., and a rough hilly road leads to Thun by the villages of *Röthenbach* and Schwarzenegg. About 1 hr. lower down, at *Horben*, the Emmenthal opens out, and the char-road from Eggiwyl crosses the river. Rather the shortest way to Burgdorf is to keep along the main stream to Signau (Rte. P), and thence to Lüzelflüh ; but it is a very slight détour to follow the foot-path to the rt. leading by Ilfis to Langnau, whence a post-carriage starts twice a day for the rly. station of Burgdorf, passing by Rüderswyl and Lützelflüh.

SECTION 25.

TITLIS DISTRICT.

It is impossible to complete the description of the Bernese Alps without taking account of the group of snowy Alps lying E. of the valley of Hasli, and dividing the head waters of the Aar from those of the Reuss. The mountain mass included in that definition is subdivided into three smaller groups by two lines of valley traversed by the paths leading to the Surenen and Susten passes; but it is on the whole more nearly connected with the Bernese chain than with the ranges on the E. side of the Reuss. The main group, a complex mass including four considerable ridges, attains its greatest height in the Winterberg and the Galenstock. Better known to ordinary travellers is the less lofty group whose highest peak is the Titlis, and accordingly this has been chosen to give its name to the present Section. Orographically the group of mountains culminating in the Blackenstock and the Uri Rothstock, and forming the southern shore of the Lake of Lucerne, should be included in this section; but it has appeared more convenient to describe these along with the Surenen Pass in § 26.

The boundaries of this district thus limited are the valley of Hasli, the Brünig Pass, and the valley of Sarnen, the valley of Engelberg and the Surenen Pass, and the valley of the Reuss from near Altdorf to the Furka.

The principal group includes four nearly parallel ridges running NNW. and SSE. That forming the E. boundary of the valley of Hasli reaches 11,155 ft. in the *Thierälplistock*, whence it extends NNW. to the *Mährenhorn* (9,593′), and S. to the *Gerstenhörner* (10,450′). A wide reservoir of névé whence the Trift Glacier flows to the N. and the Rhone Gl. to the S., divides this range from the more easterly range whose central mass is known as the *Winterberg*. As conjectured in the first edition of this work, the highest point of the Winterberg, now called *Dammastock* (11,920′), is the culminating point of this region, rather than the Galenstock (11,798′) which forms its southern extremity. N. of the Winterberg the range collectively known as the *Thierberg*, attains 11,306 ft. Farther east

than the last is the *Sustenhorn* range, rising at its highest point to 11,529 ft., divided from the last by the Stein Glacier and the upper part of the Geschenenthal. Lastly, another ridge still farther east is separated from the last by the Voralpthal, a branch of the Geschenenthal. Its highest summits are the *Spitzliberg* (11,214′) and the *Voralpstock* (10,574′). There are plain indications of the existence of a transverse range extending ENE. from the Mährenhorn to the Stücklistock (10,528′), and the lower part of the Geschenenthal, is bounded on the S. by a nearly parallel range diverging from the ridge between the Winterberg and the Galenstock.

The fine scenery of this district has only of late attracted much attention from English travellers, but more than 20 years have elapsed since M. G. Studer drew attention to it in his 'Topographische Mittheilungen,' frequently cited in the last section. Much additional information is found in Vol 2 of the Jahrbuch of the Swiss Alpine Club. Good quarters are found by the mountaineer at the Stein Alp and the Engstlen Alp, and some excursions may be made from Hof or Guttanen in the Haslithal. The ascent of the Galenstock is most easily made from the inn at the foot of the Rhone Glacier, but is also practicable from the Grimsel or the Furka.

Route A.

BRIENZ OR MEYRINGEN TO LUCERNE BY THE BRÜNIG.

	Post stunden	Eng. miles
Lungern	3¾	11¼
Sarnen	3¼	9¾
Alpnach-Gestaad	1½	4½
Lucerne	3¼	9¾
	11¾	35¼

A new post-road between Lungern and the valley of Hasli was opened for traffic in 1861. Diligences ply daily between Alpnach and Brienz and Meyringen in connection with the steamers on the Lakes of Lucerne, Brienz, and Thun, so that travellers may go the whole way from Lucerne to Berne in one day. Those who wish to see the country will prefer to travel on foot or horseback between Meyringen or Brienz and Sarnen, or else to hire an open carriage—price, with one horse, to Lucerne 40 fr.—with two horses, 60 to 80 fr. It is a better plan to take the carriage only from Brienz or Meyringen to Gestaad, or else to Stanztad, paying 25 fr. for a 1-horse carriage, or 40 fr. with 2 horses.

The distance by road is about 1 m. greater from Meyringen than from Brienz; but a foot passenger may save about 3 m. in going from Meyringen, or nearly 1 m. from Brienz, by following the old mule-paths. The inns at Lungern are dear, and certainly not better than those at Sachseln and Sarnen.

The new road across the Brünig turns aside from the road between Brienz and Meyringen (§ 24, Rte. A) at the bridge of Wyler. The ascent of about 1,600 ft. is tolerably steep, but the views gained along the valley of Hasli make the way interesting. The finest prospect is from the old Toll-house, a short way below the summit of the pass, where two inns now offer lodging and refreshment to travellers. Here the mule-track from Meyringen joins the road. It is much the shorter and more picturesque way. A few hundred yards now take the traveller to the summit of the *Brünig Pass* (3,648′), lying between the *Wylerhorn* (6,283′) and the *Schorren* (5,638′). The former summit, commanding a very fine view, may be reached in 2 hrs. from the Toll-house.

For about a mile from the summit the road traverses an undulating plateau, chiefly covered with forest, and reaches the brow of the descent towards the valley of Sarnen at a small oratory. The descent by the old mule-path, amidst broken masses of rock and pine forest, is extremely picturesque.

Lungern (Inns: zum Brünig; Löwe;

both tolerably good and dear), a picturesque village in the Canton Unterwalden, the highest in the valley of Sarnen. A fall of the Dundelbach, 200 ft. in height, on the opposite side of the valley, is near at hand. The village originally stood on the shore of the small *Lake of Lungern*, formed by a natural barrier of rock stretching across the valley, and holding up the waters to a height of 700 ft. above the plain of Giswyl. As the barrier appeared to be of small breadth, the plan of lowering the level of the lake by a tunnel was suggested nearly a century ago, and achieved in 1836. It is doubtful whether the value of the land thus gained for cultivation repaid the outlay, while the result has certainly marred the picturesque effect of the lake. From some points on the surrounding slopes the peaks of the Wetterhörner may be seen towering over the intermediate mountains. The road runs along the E. shore near the ancient level of the lake, which is 120 ft. above the present outlet. A rather steep descent by a rocky slope, called the Kaiserstuhl, leads down to the little alluvial plain of *Giswyl*, whose little lake has been partly drained, partly filled up by the deposits brought down by the Lauibach. To the W. rises the *Giswylerstock* (6,075′), interesting to geologists owing to the extraordinary contortions of its strata. Here the stream from the *Klein-Melchthal* descends from the SSE. to join the *Aa*, which drains the valley of Sarnen. By that way lies a path to Meyringen, shorter, but much higher and rougher, than that by the Brünig.

The road soon approaches the pretty *Lake of Sarnen*, a sheet of water about 4 m. long and 1 broad, with gently-sloping shores, 1,546 ft. above the sea, and nearly 900 ft. deep. On the E. shore stands

Sachseln (Inns: Weisses Kreuz; Engel; both good country inns). The parish church, a considerable building for so small a village, contains the bones, with various relics, of Nicholas von der Flüh, one of the worthies of Switzerland, of whom the Canton Unterwalden is justly proud. 'He enjoys the rare reputation of a patriot, and at the same time a peace-maker, having spent his life in allaying the bitterness and dissensions between his countrymen, which, at one time, threatened the destruction of the Helvetian Republic. After an active life, in which he acquired a good reputation as a soldier in the field and an adviser in council, at 50 years of age he retired from the world into the remote valley of Melchthal, where he passed his time as a hermit in a humble cell, in exercises of piety. His reputation, however, for wisdom as well as virtue, was so high that the counsellors of the confederacy flocked to him in his solitude to seek advice, and his sudden appearance before the Diet at Stanz and his conciliating counsels prevented the dissolution of the confederacy. After enjoying the respect of men during his lifetime, he was honoured after his death (1487) as a saint.'—[M.]

A tolerably executed portrait of Bruder Klaus, as he is called by the country people is shown 1½ m. beyond Sachseln in the Rathhaus at

Sarnen (Inns: Schlüssel, good; Adler, fair; Obwalder Hof, new; Sarnerhof), the chief place of this division of the canton called Obwalden. A path leads from hence to Schüpfheim in the Entlebuch (§ 24, Rte. P). The hill of Landenberg over Sarnen marks the site of a castle once held by the Hapsburgs. The cruelties practised by one of their bailiffs led to the rising of the peasants and the destruction of the castle in 1308, one of the earliest events in the struggle for Swiss independence. It is a walk of about 1 hr. to the *Ranft*, a wild recess in the neighbouring Melchthal (Rte. B), where a chapel stands on the site of the hermitage of Nicholas von der Flüh.

The shortest road to Lucerne is by *Alpnach* (Inn: Schlüssel), along the l. bank of the Aa. Passing along the S. base of the Pilatus (§ 26, Rte. A), the road reaches the Alpnacher See, one

of the bays of the Lake of Lucerne, at

Gestaad (Inn: Weisses Ross, good and reasonable; H. Pilatus), where the lake steamers touch twice a day in summer, reaching Lucerne in 1 hr. The diligence follows a new road along the shore of the lake, making a circuit round the base of the Lapperberg, a promontory of the Pilatus. From the E. point opposite Stanzstad, a wooden bridge is carried across the shallow strait that connects the Alpnacher See with the L. of Lucerne. Foot passengers may shorten the way to Lucerne by traversing a low pass called *Rängg* (2,323′) which leads direct to *Hergiswyl* (Inn: Rössli, good), a village beautifully situated on the lake at the E. base of the Pilatus, which is most frequently ascended from hence. The road soon after quits the Canton Unterwalden to enter that of Lucerne. At *Winkel* it leaves the lake shore and passes through a rich and beautiful tract leading to

Lucerne (§ 26, Rte. A). The road from Sarnen to Stanzstad, which is followed by many travellers bound for Lucerne, is described in the next Rte.

Route B.

MEYRINGEN TO STANZSTAD, BY THE MELCH THAL.

8½ hrs.' walking to Sarnen; 9¾ m. by carriage road thence to Stanzstad.

A lover of alpine scenery may well prefer this route to that of the Brünig; it is somewhat shorter in actual distance, but much more laborious. The name Hasliberg is given to the mountain-slopes NE. of Meyringen, drained by the Alpbach torrent, which forms a pretty cascade near the village. The higher range, not visible from Meyringen, forming the boundary between the Cantons Berne and Unterwalden, attains the height of 8,150 ft. in the *Hohenstollen*, and 8,516 ft. in the *Laubberstock*. The pass leading to the Melch Thal lies immediately to the W. of the latter summit.

The ascent lies by the l. bank of the Alpbach torrent, passing the hamlet of Rüti. As the traveller rises above the valley, he obtains very fine views of the Oberland peaks, and the mountains between the great Scheidegg and the L. of Brienz. In 3¾ hrs. he attains the summit of the

Laubergrat (7,352′). This commands a magnificent view of alpine peaks to the W. and S., and on the opposite side overlooks the head of the *Melch Thal*, a picturesque glen about 14 m. long, which opens into the valley of Sarnen close to that town. An easy descent of about ¾ hr. leads from the pass to the *Melch See*, a large mountain tarn, nearly 1 m. in length. This is drained through fissures in the limestone strata, and the stream first comes to light a long way farther down in the valley. A track leads due E. from the lake to the *Tannli Alp*, a level but high ridge, by which the Inn on the Engstlen Alp (Rte. D) is reached in 1¾ hr. The descent through the Melch Thal is steep and very rough for the first hour. Thenceforward the path lies through a forest of grand old trees, and at intervals the views down the valley are magnificent. In 2 hrs. from the lake the traveller reaches the village of

Melchthal, with two small country Inns. The site of the house once inhabited by Arnold von Melchthal, one of the founders of Swiss independence, is still pointed out. A char-road is carried from hence to Kerns (see below) along the E. side of the valley, commanding a pleasing view; but the pedestrian will prefer to make a slight détour in order to follow the more interesting foot-path on the l. bank of the torrent, passing by the *Ranft*, and the oratory of *Flühli*, much visited by the country people. The

distance from Melchthal to Sarnen or to Kerns is in either case about 2 hrs.

The road from Sarnen to Stanz follows a trough-like depression parallel to the course of the Aa, but separated from it by the ridge of the Mutterschwandnerberg.

Kerns (Inns: Krone, Rössli) is a large village, with a handsome modern church. An annual festival for wrestling and other games is held here on the 1st August. The road to Stanz passes through several small villages, and near to a cavern—*Drachenhöhle*—where, according to the local legend, Struthan von Winkelreid, the brother of Arnold, the hero of Sempach, slew a dragon that ravaged the country, and died of his wounds. A chapel, near at hand, is erected in commemoration of the deeds of the two brothers. A pretty path to the l. through an opening in the hills, called the Rotzloch, enables the pedestrian to save 2 m., the distance that way to Stanzstad being but 1 m. The road makes a détour by the town of

Stanz (Inns: Krone, good and reasonable; Engel), the chief place of *Nidwalden*, as this division of the canton is called, to distinguish it from the upper division or Obwalden. The house of Arnold von Winkelried, whose statue stands in the market-place, is pointed out to strangers, and a part of the building seems old enough to justify the local tradition. A tablet in the parish church records the tragic events of the 9th of September, 1798, when the people of Unterwalden showed that the blood of the Winkelrieds still flowed in their veins, and renewed in modern times deeds worthy to be remembered along with those of Thermopylæ or St. Jacob.

Having dared to resist the introduction of the new political constitution imposed upon the Swiss by French arms, a population of little more than 2,000 men and women capable of bearing arms successfully opposed for 5 days the advance of a French corps of 16,000 men under General Schauenbourg. In the last desperate struggle there lay among the dead 102 women and 25 children. The ferocity of the victors equalled the desperation of the resistance. The village of Stanzstad and every house in the open country were burned to the ground, and 63 helpless people, who had sought refuge in the church, were slaughtered along with the priest at the altar. Stanz itself was saved from the flames by the firmness of the officer commanding a French brigade.

The road to Engelberg is described in § 26, Rte. F.

An excursion may be made from hence to the summit of the *Stanzerhorn* (6,232′), sometimes called Sehnauz. Charge for a guide, 3 or 4 fr. To go and return is a walk of fully 6 hrs. Other excursions in the direction of Buochs are noticed in § 26.

An omnibus plies twice a day from Stanz to meet the steamer for Lucerne, the distance being fully 2 m., to

Stanzstad (Inns: zum Winkelried, hotel and *pension*, good,—carriages kept for hire; Hôtel Freihof; and several smaller houses), beautifully situated on the lake, opposite to the Pilatus, the foot of which is reached by the new wooden bridge crossing the narrow part of the lake. Near at hand, by the path through the Rotzloch leading to the chapel of Winkelried (see above), is the Pension Rotzloch, adjoining a mineral spring, whither visitors resort for baths, for the milk or whey cure, or merely to enjoy the beautiful scenery of the neighbourhood. It is kept by M. Blättler, the meritorious builder of the chief inn on the Pilatus.

Route C.

SARNEN TO ENGELBERG.

Two paths lead from the Melch Thal to Engelberg: a guide is said to be necessary, as by neither way is the path well marked.

1. *By the Storegg Pass.* 5¼ hrs.' walk.—This is rather the shorter way, but the ascent is steeper. From the Ranft, about 1 hr. above Sarnen, it is necessary to cross to the rt. bank of the Melch Aa—the torrent draining the Melch Thal. A path then mounts the opposite slope, and soon enters a lateral glen. The ascent lies by the rt. bank of a small stream that descends towards the main valley from a depression between the Salistock (7,628′) and the Bockistock (7,468′). Towards the summit the path is steep and ill-marked. The *Storegg Pass*, 6,703 ft. above the sea, about 3½ hrs. from Sarnen, is a notch in the rocky ridge connecting the above-named summits. A small tarn called the Lutern See is reached in ½ hr. from the pass, and the path then bends to the S., descending a rather steep slope, and in 1 hr. joins the path from the Juchli (next described), about ½ hr. above Engelberg.

2. *By the Juchli.* 6 hrs.' walk.—This is on the whole a more interesting way than the last, and the view from the top is preferable. As far as the village of Melchthal, 2 hrs. from Sarnen, the way is described in the last Rte. By a détour of ½ hr. that place may be reached in a char. Fully 2 hrs are required for the ascent, due W. from the village, chiefly by steep grassy slopes, to the summit of the Juchli (7,131′). The view backward over the Melch Thal is pleasing; but that to the eastward, extending to the snowy range of Schlossberg and the Spannörter, is still more interesting. The descent lies in part over loose débris, and the track is scarcely traced; 1½ hr. suffices to reach the point where this path unites with that from the Storegg. Passing the hamlet of Erspan, the traveller soon reaches Engelberg (Inns: H. Catani, best; H. Müller, good; H. Engelberg), described in § 26, Rte. F. In taking this pass from Engelberg the traveller may engage a guide as far as the summit—charge, 3 fr.—the way to Melchthal being easily found.

Route D.

MEYRINGEN TO ENGELBERG. ASCENT OF THE TITLIS.

	Hrs.' walking	Eng. miles
Wyler . . .	1¼	4
Engelberger Joch	3½	9½
Engelberg . .	3¼	7½
	8¼	21

The pass is traversed by a bridle-path, but in some places the forest is so thick that it is troublesome to ride, and in the steepest part of the descent towards Engelberg ladies do well to walk. The short cut hereafter mentioned saves ½ hr. Horses may be taken at Hof as well as at Meyringen.

As far as Hof, 1 hr. from Meyringen, the way is the same as that described in § 25, Rte. C. The char-road there turns out of the Haslithal, and begins to ascend through the valley of Gadmen (Rte. E.). At Wyler, about 1¼ m. above Hof, the path leading to Engelberg turns aside to the l., leaving the Gadmenthal in order to enter the lateral valley called *Gentelthal.* The way lies up the steep slope of the mountain through a thick forest. There is a short cut, but a traveller without a guide does unwisely when he leaves the beaten track. After attaining a plateau of pasture-land that commands a fine view towards the Urbachthal, the track is carried at a gentler inclination along the slopes above the rt. bank of the Gentelbach. The Gentelthal is enclosed between two high and steep ridges—to the N. the *Erzegg* (9,336′), between which

and the Lauberstock (Rte. B) an unfrequented path leads to the Melch See; to the S. the *Gadmenfluh* (9,987′), a spur from the Titlis dividing this valley from the Gadmenthal. The scenery is pleasing, the path alternating between pine forest and green pastures that command fine views of the neighbouring mountains. Near the châlets of Jüngholz, 1½ hr. from Wyler, a pretty cascade is seen on the opposite side of the valley, formed by the *Jüngibrunnen*, that burst out in numerous copious springs from the base of the Gadmenfluh. Another pretty waterfall formed by the Gentelbach lies on the rt. of the path ¼ hr. further up the valley, and deserves a slight détour. About 2 hrs. from Wyler the track crosses the stream, and a steep and rough ascent of nearly 1 hr. leads thence to the *Engstlen Alp*, an extensive tract of mountain pasture whereon lies a small lake. A remarkable intermittent spring called *Wunderbrunnen* lies near the path. It is evidently supplied from the melting of the snow on some of the adjoining heights, as it flows only during the warmer months of the year from spring to autumn, and between 8 A.M. and 4 P.M., being dry at other times. Near at hand is a little mountain Inn, more than 6,000 ft. above the sea, very well kept, and affording comfortable quarters to the mountaineer. Those who are tempted to remain some time for the sake of the pure air and fine scenery, may live *en pension* at the very moderate rate of 4 fr. a day. The most interesting excursion to be made from hence is the ascent of the Titlis, described below, but a practised mountaineer may doubtless find occupation among the neighbouring glaciers. [A pass called the *Sätteli* (about 6,500′) traverses the range to the W. of the Gadmenfluh, and leads either to Mühlethal or to Gadmen, in 3½ hrs. from the Engstlen Alp. There is another pass over the same range much nearer the Titlis. The descent on the S. side is by a small and steep glacier. In that way a traveller with a guide may reach Gadmen by the rt. bank of the Wendenthal, or the Stein Alp by crossing the Wenden glacier.] The geologist may find many Ammonites and other fossils of the Middle Oolite or Oxfordian period in the rocks of the Geisberg near the Engstlen Alp.

A steep ascent of ¾ hr. leads from the Inn on the Engstlen Alp to the summit of the *Engelberger Joch*, commonly called Joch Pass, 7,244 feet above the sea, here forming the boundary between the Cantons Berne and Unterwalden. The summit commands a fine view of the neighbouring peak of the Titlis, and of the range of the Wallenstöcke N. of Engelberg. There is a choice of two ways for the descent from the Joch. The horse-track turns due N., and in less than ½ hr. leads the traveller to the châlets of the Ober Trübsee Alp, and so down to the *Trüb See* (5791′), a small tarn lying in a hollow to the rt, fed by the melting of the Trübsee Glacier, which flows from a plateau between the summits of the Titlis and the Ochsenberg. The neighbouring slopes are covered with huge blocks of stone fallen from the adjoining heights, amidst which it is easy for a stranger to miss the track. In about 1½ hr. from the pass is the Unter Trübsee Alp. Thence the bridle-track winds down the steep slopes of the valley of Engelberg, reaching that village in rather more than 3 hrs. from the summit of the pass.

The other way for descending from the pass is shorter, but practicable only on foot. It is necessary to bear somewhat to the rt. of the bridle-track, keeping in the direction of Engelberg for a short distance, then descending abruptly on the rt. to a plain, on which, at ⅓ m. on the left, is situated the Trüb See, fed by glaciers descending from the Ochsenberg on the rt. It is necessary to bear away to the rt. hand extremity of this plain, where there is a gap, from which a very rough and

precipitous path, called the Pfaffenwand, descends for 20 minutes over grass, and afterwards débris, to the pastures, crossing which it enters the forest for ¼ hour, and shortly reaches

Engelberg, [M].

For an account of Engelberg and the Surenen Pass, see § 26, Rte. F.

Ascent of the Titlis. There is scarcely any one of the higher peaks of the Alps so easy of access as this; and as it has the advantage of overlooking the whole of the N. of Switzerland on the one side, and commanding a very fine alpine panorama on the other, it is deservedly often visited. When no tolerable night quarters were to be found nearer than Engelberg, the ascent was, however, decidedly laborious; but since the opening of the good little Inn on the Engstlen Alp, the expedition is brought within the reach of moderate walkers. In clear weather the way is so easily found that practised mountaineers will scarcely require a guide; but as there are a few crevasses in the upper névé, and some spots steep enough to make a slip dangerous, the writer recommends that the rope should not be neglected.

For the sake of the fine effect of sunrise when seen from a point high enough to overlook the nearer mountains, it is worth while to start from the Engstlen Alp some time before sunrise. The way follows the path to Engelberg as far as the top of the Joch Pass, then turning to the rt. along the ridge. After a while it becomes necessary to descend a little in order to cross a bed of snow, and then to mount along the side of the Trübsee Glacier. Henceforward the course is the same as that usually taken by those who make the ascent from Engelberg, passing by the Trüb See. Steep, stony pastures, called Rothe-egg, are succeeded by a slope of débris; then some easy rocks lead up to the great mantle of névé, partly consolidated into glacier, that covers on this side the highest peak of the mountain, called the *Nollen*. The easiest course is to bear somewhat to the rt. during the first part of the ascent, and then in the opposite direction. A projecting rock is often taken for the summit; but this is only a prominence in the ridge of the mountain, and after it has been attained it is necessary to cross a slight depression and achieve another final climb before gaining the topmost peak of the *Titlis* (10,627′). The projecting point that must be crossed in the ascent measures 9,944 ft., and another summit, called Reissend Nollen, in the range connecting the Titlis with the Gadmenfluh, attains 9,879 ft.

The Titlis is a limestone peak, forming the corner-stone of the Cantons Berne, Uri, and Unterwalden, cut away in a formidable precipice on the E. side, and elsewhere covered by a thick coating of névé, through which a few rocks reach the surface. The view to the N. is very extensive, the horizon being bounded by the Black Forest. More to the l. the spire of Strasburg Cathedral is said to be sometimes visible. The Oberland peaks are here seen from a point of view so unusual, that those who know them only from the side of Berne and Interlaken find it hard to recognise them. The Wetterhörner and the Finsteraarhorn, the latter assuming the form of a pyramid of dark rock, are the most remarkable objects. Nearer at hand the Sustenhorn presents a fine snowy cone rising above the Susten and Stein Glaciers, and the peaks that form the E. boundary of the valley of Hasli. In the far distance is seen the summit of the Monte Leone. Beyond the Spitzliberg, which forms the E. extremity of the Sustenhorn group, are seen many distant summits of the Grisons Alps. Those who wish to study the topography of the Alps from this point will do well to procure a panorama published by Zeller of Zurich, kept for sale at Catani's Hotel at Engelberg, and to be found at Lucerne, &c. 5 hrs. suffice for the ascent from the Inn at the Engstlen Alp, and 3 hrs. for the

descent. Competent guides are easily found by application to the landlord. The fatal accident of 1865, which cost the life of a good guide, as well as that of the traveller, did not occur on the usual line of ascent.

Route E.

MEYRINGEN TO WASEN, BY THE SUSTEN PASS—ASCENT OF THE SUSTENHORN.

	Hrs.' walking	Eng. miles
Hof . . .	1	3
Nesselthal . .	2	6
Stein Alp . .	2½	7
Susten Pass . .	1	2
Maien . . .	2½	6¾
Wasen . . .	1½	3¾
	10½	28½

In 1811, when the Valais was annexed to the French Empire, it became important to open direct communication between the Canton Berne and the road of the St. Gothard. A char-road over the Susten Pass was commenced and partially completed, when the fall of the Empire restored traffic to its natural channels. The road of the Susten was neglected and let to fall to ruin, but a new line is now in construction at the cost of the Swiss Confederation. A portion of the ancient paved way has been destroyed by the advance of the Stein Glacier. The journey from Meyringen to Wasen is usually counted 11 or 11½ hrs., but the distances noted above are believed to be correct. A fast walker has accomplished the whole in 9¼ hrs. of actual walking. Hire of a horse from Meyringen, 35 fr., but return horses are often found at Hof. A guide (scarcely requisite) costs 10 fr.

At Wyler (see last Rte.) the track leading to the head of the Gadmenthal leaves to the l. that which mounts towards the Gentelthal, and is carried along the rt. bank of the Gadmer Aar past the junction of the Gentelbach. The opening of the Gentelthal appears so impracticable, that a stranger might guess in vain how access to it is obtained. The lower part of the main valley is sometimes called Mühlethal, and the middle portion Nesselthal; but these names are now generally applied only to the villages or communes herein mentioned, and the name Gadmenthal given to the entire valley. The scenery is throughout of a high order, decidedly more interesting than that of the somewhat overrated valley of Hasli. *Mühlethal* (2,733′) is a small village finely situated. About ⅓ hr. farther is *Mühlestalden*, the home of a family of guides well known to the readers of G. Studer, Desor, Roth, and other explorers of the Oberland. The head of the family is Johann von Weissenfluh, past 60 years of age, but still an active mountaineer. He is of higher social position than is usual in his profession, boasting gentle blood, and is much respected in his native valley. His sons, Andreas and Melchior v. Weissenfluh, are good and careful guides, well acquainted with the neighbouring Alps, and the greater part of the Oberland. Near Mühlestalden the Triftbach, draining the great Trift Glacier (Rte. F.), flows into the Gadmenthal through a narrow cleft, which does not lead the stranger to suppose that it is the gateway to one of the most extensive ice-fields in the Alps. The next village is *Nesselthal*, one of the most picturesquely-situated in the valley.

The chief place lies 1 hr. farther up. The commune (Gemeinde) called *Gadmen* includes three hamlets, of which that next the church is called Am Bühl (4,101′). The inn (Bär) is poor, but travellers usually apply to the village clergyman. Melchior Moor is a good local guide. The mountains rise steeply on either side, and the inhabitants have suffered much from spring avalanches. Here a lateral glen, called Wendenthal, opens to NE., between the Gadmenfluh and the *Urathörner* (9,961′),

closed at its upper end by the *Wenden Glacier*. By that way the Titlis (Rte. D) may be reached in 6 hrs. from Gadmen, and by its SE. side a pass, which may be called *Wenden Joch* (8,694′), leads to Engelberg. After passing Obermatt, the highest hamlet of Gadmen, and crossing the Wendenbach, the ascent becomes more rapid, the path keeping about due E. on the rt. bank of the Gadmer Aar. The châlets of Weissenmatt (4,944′) stand just below one of the most picturesque parts of the route.

Pines and firs gradually disappear as the Stein Glacier comes into view, and within a few hundred yards of the ice the traveller reaches the Inn of the *Stein Alp* (6,119′), affording very fair quarters, the only convenient halting-place for a mountaineer in this valley. The Stein Glacier is said to have advanced more than a mile within the last 50 years, and it has certainly destroyed in that time the paved path that formerly led over the pass. The Glacier is more fully described below in connection with the ascent of the Sustenhorn.

Passing close by the lower end of the Stein Glacier, the path, which is carried away in many places, mounts steeply to the *Susten Pass*, 7,440 ft. above the sea, reached in 7 hrs. ascending from Meyringen. It commands a fine view of the neighbouring peaks. The main peak of the Sustenhorn is concealed by the Vorder Sustenhorn (10,889′), and the Spitzliberg is masked by the nearer *Stücklistock* (10,857′), while to the N. the rugged ridge of the Urathhörner, still nearer at hand, presents a bold and striking outline. To the E. the pass overlooks the *Maienthal*, a wild glen, nearly bare of trees, through which lies the descent to Wasen. In the background rise the mountains that separate the Reuss from the head waters of the Vorderrhein. Crossing some snow-beds that are almost always found on the E. side of the pass, the traveller descends rapidly in about ¾ hr. to the Maienbrücke, a bridge thrown over the torrent of the *Maienbach* a short way below its exit from the Susten Glacier. Nearly ¾ hr. more must be allowed to reach the Hundsalp, a group of châlets 5,627 ft. above the sea. The path crosses and recrosses the torrent several times, and approaches near to several pretty cascades. Passing the hamlets of Rüti and Fernigen, where the foaming stream of the Gurezmettlerbach descends from the N. into the valley, the village of *Maien* (4,400′) (with a poor Inn) is reached in 2¼ hrs. from the pass. The houses are defended from avalanches by angular stone embankments. The descent from Maien is steep and rough. On approaching the valley of the Reuss, the track passes a redoubt, thrown up at a remote period, occupied and defended by the Austrians in 1799, but stormed by the French troops under Loison. The high road of the St. Gothard, described in § 30, Rte. A, is reached at *Wasen* (3,068′) (Inn: Ochs, rough but clean), in 1¼ hr. from Maien.

The Maienthal may be reached from Engelberg by the *Grassen Pass*. Mr. Tuckett, who crossed in 1864, gives the following times:—Engelberg to Herrenrüti, 1¼ hr.; thence to foot of glacier, 1¾ hr.: ascent of rocks by l. bank, 1 hr. 5. min.; across glacier to top of the pass (about 9,000′?) 50 min.; down *Kühpfad Glacier* to its l. bank, ½ hr.; down steep slopes to the Klein Alp, 1 hr.; to junction with track from Susten Pass, 20 min.; thence to Wasen, 1 hr. 50 m.; in all, 8 hrs. 35 min.

Ascent of the Sustenhorn. The *Sustenhorn* (11,519) is the highest point in the snowy range that encloses on the E. side the *Stein Glacier*. That great ice-stream originates in a plateau connecting that mountain with the Thierberg. The connecting ridge, exceeding 10,000 ft. in height, is abruptly cut off on the S. side where a steep range of rocks rise above the head of the Geschenenthal. The glacier has been described as being divided into several branches, but it may more properly be said that two islets of rock rise out of one and the same ice-field. The central islet is called Bocksberg; the other

farther W. is the Thierbergli, which divides the middle from the W. arm of the glacier. The three main arms descend in ice-falls through the openings between these rocks and the containing walls of the valley. The first recorded ascent of the Sustenhorn was effected in 1841, by M. G. Studer, with Johann and Heinrich Weissenfluh. He seems to have traversed the lower part of the glacier towards the Bocksberg, and to have effected the greater part of the ascent along the E. bank of the glacier by a steep climb up rocks, débris, and snow-slopes. The Sustenhorn presents three summits following each other in ascending order from the Susten Pass to the highest peak. The lowest is called *Vorder Sustenhorn* (10,889′); the next a rocky peak, the *Hinter Sustenhorn* (10,958′); while the highest snow summit, or Sustenhorn proper, is often called Gletscherhorn by the people of Gadmen. M. Studer, having reached the saddle or depression between the two latter summits, gained the main peak by a snow-ridge, not very narrow or steep, but sufficiently so to make the use of the axe necessary. In subsequent ascents a different course has been followed. The upper plateau of the glacier has been gained by climbing the rocks of the Thierbergli between the middle and the western ice-falls, and the way thenceforward lies over a snow-field in which concealed crevasses are rather numerous. The upper plateau is reached in about 3½ hrs. from the Stein Alp. It is necessary to keep somewhat to the rt. in order to avoid several wide open crevasses, and in so doing to pass under the ridge of the Thierberg, whence, in some states of the snow, avalanches fall from time to time. When this course is followed it becomes necessary to mount nearly to the summit of the ridge overlooking the Geschenenthal (4½ hrs. from the Stein Alp) before commencing the ascent of the peak, which requires 1½ hr., or even more when the snow is soft and deep. The view to the E. and S. seems to be especially interesting, while that of the Oberland Alps must be even superior to that gained from the Titlis. A high ridge extends southward from the Sustenhorn, which gradually diminishes in height and treads to the eastward as it approaches the middle portion of the Geschenenthal.

Thierberg is a collective name for the range on the E. side of the Trift Glacier. The northernmost point or *Vorder Thierberg* (10,141′) is divided from the rest by a practicable snow col, which ought to be called Thierberg Limmi if that name had not been misapplied on the map published by the Swiss Alpine Club. Then follows the long ridge of the *Hinter Thierberg*, in which five summits have been measured by the Federal Engineers. Reckoning from N. to S. the first (10,968′) is possibly that reached in 1861 by Messrs. R. W. E. Forster and Hardy Dufour. The second (11,215′) was attained in 1864 by M. Preisse. The third and fourth, both measure 11,306 ft. One of these highest summits was reached by Herr Wenger in 1864, but no one seems to have attempted the extreme S. peak (11,165′). The last four summits overlook the Kehle Glacier at the head of the Geschenenthal (Rte. H), and are better reached from the Trift Glacier than from the Stein Alp.

The passes to Gesehenen are described in Rte. H.

Route F.

MÜHLESTALDEN TO THE GRIMSEL, BY THE TRIFTLIMMI.

11 to 12 hrs., exclusive of halts.

The first traveller known to have explored the great glacier district lying between the Grimsel and the valley of Gadmen was M. G. Studer. In the various excursions recounted in his 'Topographische Mittheilungen,' that excellent mountaineer made so thorough an acquaintance with the recesses of this little-known district, that little was added by subsequent writers, until the appearance of the second *Jahrbuch* of

the Swiss Alpine Club, containing the results of several expeditions undertaken in 1864 by the members of that body. As regards the chief addition to the topography of the district, the Swiss travellers were, however, anticipated in the same season by Mr. Tuckett and by Mr. Jacomb (see Rte. H), The family of Weissenfluh, mentioned in the last Rte., were long considered the only competent guides for this region, and are still those most intimately acquainted with it, but Arnold Kehrli, who accompanied Mr. R. Fowler across the pass in 1854, the Blatters of Meyringen, Melchior Moor of Gadmen, and some others, are quite competent to lead travellers to the Grimsel. Future visitors wishing to explore the upper snow-fields and the surrounding peaks, will be glad to avail themselves of the hut constructed by the Swiss Alpine Club on the rocks of the Thältistock, above the upper ice-fall of the Trift Glacier, 8,251 ft. above the sea. This is as comfortable a shelter as can be expected in such a position, being supplied with rugs, a stove, crockery, &c., and affords far better quarters than the hut at the Windegg used by the earlier explorers. Those who object to pass the night there, or at the Windegg, will do well to lodge at Weissenfluh's house at Mühlestalden, where there is no inn, and to start before daylight in the morning.

A wooden bridge crosses the Gadmer Aar at Mühlestalden, near to the junction of the torrent from the Trift Glacier. The track mounts above the l. bank of the torrent, which has cut for itself a deep and impassable gorge between the base of the *Radolfshorn* (8,543′)—here pronounced Radlefhorn —to the E., and the Fläscherhorn, a buttress of the Mährenhorn, to the W. In 3 hrs. of rapid ascent, passing along narrow rocky ledges, or climbing steep slopes, the traveller reaches the *Windegg* (6,237′), a spot lying at the base of one of the rocky ribs of the Mährenhorn, overlooking the lower ice-fall of the *Trift* Glacier, with a noble view of the surrounding scenery. Here the elder Weissenfluh has constructed a rude hut, without door or window, but tolerably well roofed, designed for his own convenience as a chamois-hunter and mineralogist, but available for the few travellers who pass this way. The most interesting part of the view is that of the range of peaks seen on the opposite side of the glacier. The first, commencing on the l. hand, is the Radolfshorn, at whose base, just above the rocky bank of the glacier, is the châlet of Graggi, inhabited by two herdsmen, where M. G. Studer twice found shelter for the night. ESE. of the Radolfshorn is the *Drosistock* (9,288′), and farther back the *Giglihorn* (9,515′) Between these and the Vorder Thierberg is a depression which marks the Steinlimmi Pass (next Rte.), whereby it is practicable to pass from the Trift to the Stein Glacier. Farther S. rises the range of the Hinter Thierberg, and below it a buttress, called Thältistock, which projects towards the Trift Glacier. This lies in a tolerably level plateau, with few crevasses, between the spectator and the base of the Thierberg range. Lower down is an icefall passed by the traveller who has followed the path to the Windegg. An upper ice-fall of far grander dimensions, and utterly impassable, separates the near portion of the glacier from the upper plateau, and at first sight it is not easy to guess how the passage is to be effected. The traveller is not quite reassured when he is told that the ascent is accomplished by the rocks of the Thältistock. These appear from a distance formidably steep, but, as the rocks give good hold for feet and hands, the scramble is not difficult. In ½ hr. from the Windegg the glacier is crossed, and 1 hr. more suffices to reach the upper plateau of the glacier above the ice-fall, near the new hut of the Swiss Alpine Club. As, to a spectator viewing the glacier from below, nothing is visible beyond the ice-fall, it was long supposed that the valley of the Trift was terminated by

a ridge connecting the Thierberg with the Diechterhörner, which is accordingly inserted in the older maps. In point of fact, the snow-fields stretch southward with a gentle slope for at least 2 m. farther to the ridge that here divides the Aar from the Rhone. This runs diagonally across the snow-fields in a NE. direction, from the *Thierälplistock* (11,132′), to the W. peak of the Schneestock, which forms the northern end of the Winterberg range. In place of the name Triftgletscher Joch, used in the first edition of this map, the writer willingly adopts the name *Triftlimmi* proposed by M. Lindt, inasmuch as in the local dialect the word *limmi* is used for a practicable pass over a high ridge.

Keeping nearly due S., and about the centre of the upper glacier, with the range of the *Diechterhörner*, whose highest point reaches 11,119 ft. at some distance to the rt., the traveller reaches the summit of the *Triftlimmi* (about 10,200′), in about 2¼ hrs. from the point where he attained the upper plateau of the glacier. Along the dividing ridge low rocks formed of large rectangular slabs of gneiss crop out from the névé, and at some points rise a few hundred ft. about the lowest point of the pass. On either side the eye ranges over vast snow-fields, which rise to the E., some 1,600 ft. above the level of the pass, to the ridge dividing the Rhone Gl. from the *Damma Glacier*, that falls into the Geschenenthal. This ridge, collectively called Winterberg, includes three principal summits —the *Schneestock* (11,667′), *Dammastock* (11,920′), and *Rhonestock* (11,821′). All of these were reached without difficulty from the upper plateau in 1864. The descent from the pass requires some caution, as the névé covers many concealed crevasses, and is necessarily traversed in the middle of the day. The best course over the upper part of the Rhone Glacier is to keep all the way near to the rt. bank. The peak of the Galenstock comes into view a short way below the summit. As the traveller advances, new peaks are seen in succession towards the S. and SW., beginning with those surrounding the Gries Pass (§ 29, Rte. A), and terminating in the giants of the Monte Rosa group. The upper basin of the Rhone Glacier forms an extensive nearly level plateau, where the snow is so soft that travellers who cross it are forced to wade rather than walk. By taking the course above suggested Messrs. A. G. Girdlestone and Trueman escaped this inconvenience, and shortened the way so much that in 1¾ hr. from the summit they gained *terra firma* a little above the great ice-cascade of the Rhone Glacier, so much admired by those who pass the lower end of the ice-stream in going from the Furka to the Grimsel. On the W. side of the glacier, below the ridge of Nägeli's Grätli, the alpine pastures of the Saasberg extend to the Grimsel Pass. The undulating surface contains many small pools and tarns, without any beaten track, and the slopes on the side of the Grimsel present steep slippery faces of gneiss. In clear weather there is no difficulty in finding a way down to the little lake near the Hospice, which may be reached in 4½ hrs. from the Triftlimmi. When the clouds lie low, the best guide may be at fault, and it is then best to keep straight on a little S. of W. until the traveller has gained the beaten track of the Grimsel (§ 24, Rte. C), somewhere near the top of the pass.

M. G. Studer has pointed out the possibility of reaching the Furka, instead of the Grimsel Hospice, in one day from the Gadmenthal, by leaving the Rhone Glacier on its l. bank above the great ice-cascade, and keeping along the slopes of the Galenstock until the track of the Furka Pass is reached at no great distance from the summit. Here the traveller now finds better accommodation than at the Grimsel.

| *The Ascent of the Galenstock* (11,798′) has been repeatedly made from the Furka inn (§ 30, Rte. C); but is done at least as well from the inn at the

Rhone Glacier, or from the Grimsel. By whichever way it be approached, the mountain is now usually climbed by a small lateral glacier on its SW. flank leading to the arête S. of the peak. Like all the higher mountains of this district, it has a ridge running N. and S., and very steep on its eastern face. The panoramic view will generally be preferred to that from the somewhat higher summit of the Dammastock. M. Desor has published an account of the first ascent, made by himself and two companions, with five guides, in 1845, when they reached the summit by the northern arête. In descending, a huge mass of snow which overhung the edge of the precipice on the Realp side was suddenly detached; not being attached together with the rope, one of the party fell along with the incipient avalanche. His life was saved by the fortunate accident that the portion of the snow on which he stood struck a projecting rock only 70 feet below the ridge of the mountain, while the remainder of the detached snow fell a distance of 2,000 or 3,000 ft.]

Forgetting M. Desor's statement that he looked down from the arête of the Galenstock to the valley of Realp, and misled by the older maps, many travellers believed it possible to reach the Geschenenthal by crossing the ridge N. of the Galenstock. On the W. side of that ridge lies the *Tiefen Glacier*, whose torrent falls into the Urserenthal about $1\frac{1}{4}$ hr. above Realp (§ 30, Rte. C), while another high ridge diverging from the Winterberg divides the Tiefen Gl. from the Damma Gl. and the Geschenenthal.

Route G.

STEIN ALP TO GUTTANNEN, BY THE STEINLIMMI AND FURTWANG PASSES. ASCENT OF THE STEINHAUSHORN AND THE MÄHRENHORN.

About 11 hrs.' walk, exclusive of halts.

There are not many districts in the Alps where a single day's walk offers so much variety and grandeur of scenery as that here described. The pass of the Steinlimmi, connecting the Stein Glacier with that of Trift, and the Furtwang, leading from the l. bank of the latter to Guttannen in the valley of Hasli, may be united in a single excursion, but may also be taken separately, or variously combined with other expeditions noticed in the preceding Rtes. Thus, a traveller starting from the Stein Alp may cross the Steinlimmi to the châlet of Graggi, then traverse the Trift Glacier to the Windegg, and descend on the same day to Mühlestalden, and so to Hof or Meyringen; or else sleep at Graggi, or the Hut on the Thältistock, and reach the Grimsel on the following day by the Triftlimmi (See last Rte.). So also a traveller going from Meyringen to the Grimsel may turn aside at Hof, reach the Windegg by the path mentioned in the last Rte., and then cross the Furtwang to Guttannen in about $10\frac{1}{2}$ hrs. from Meyringen. In order to reach the summit of the Steinhaushorn or the Mährenhorn, it is a better plan to start from Hof.

The *Steinlimmi* is a depression in the range connecting the Thierberg with the Giglihorn. The ascent from the Stein Alp lies by the slopes on the W. side of the Stein Glacier, at first about due S., but gradually bending to the W. round the rocks of the Thaleckhorn. For the last hour the way is steep, lying over snow-slopes alternating with rocks or débris. About 3 hrs. suffice to reach the summit, which is 8970 feet above the sea-level. The view, though limited, is very striking. Looking backwards, the traveller sees the Sustenhorn, the Titlis, and the peaks of the Maienthal, beyond the Stein Glacier, which lies below him. On the opposite side he overlooks the Trift Glacier, backed by the Kilchihorn, the Steinhaushorn, and the Mährenhorn; while the opening of the Furtwang between the two last gives a distant view of the Schreckhorn, the Wetterhörner, and other summits of the Oberland Alps. Keeping somewhat to

the rt. the traveller descends by the declivity of the Drosistock to the châlet of *Graggi* (2 hrs. from the pass), mentioned in the last Rte., on the rocky pastures above the rt. bank of the Trift Glacier. Although the slope is not rapid, the ice is here a good deal crevassed, and from ½ hr. to 1 hr. is required to pass to the opposite bank at the base of the Windegg. The *Furtwang Pass*, 8393 ft. in height, wrongly placed on the S. side of the Steinhaushorn in the map of this district given in the second series of 'Peaks, Passes, and Glaciers,' lies on the N. side of that peak, and affords an easy mode of connecting a visit to the Trift Glacier with the ordinary route from Meyringen to the Grimsel. A rather steep ravine, descending between the Steinhaushorn and the buttress of the Mährenhorn, called Windegghorn, affords a passage to the traveller who would attain the Furtwang from the Windegg. The ascent is rather long and steep, requiring about 3 hrs., but presents no difficulty. The descent to Guttannen is made in little more than 2 hrs.; but 3½ hrs. are required for the ascent, when the Furtwang is attacked on the W. side. In case of need, night-quarters may be found at the Steinhaus Alp.

The summit of the *Steinhaushorn* (10,276′) may be reached in about 2 hrs. from the Furtwang. The latter part of the way is a rather difficult climb; none but practised mountaineers should attempt it without a guide. The view includes a vast panorama of Alpine peaks. Though somewhat lower than the Steinhaushorn, the *Mährenhorn* (9,839′) is in most respects a more interesting point of view. Besides the array of peaks which inevitably come within reach of the mountaineer who attains so lofty a point, the Mährenhorn overlooks the whole length of the Haslithal and the Gadmenthal, and a considerable portion of the Gentelthal, the Urbachthal, and the glen of the Triftbach. The summit is reached in 2 hrs from the Furtwang by a scramble over steep rocks, with here and there an ice-slope requiring the use of the axe. The descent on the N. side is equally steep, and the expedition is fit only for trained mountaineers.]

Of the remaining peaks in the range on the E. side of the Haslithal, the sharp obelisk-shaped *Kilchihorn* (10,213′) still claims the title of inaccessible. The highest of the *Diechterhörner* (11,119′) was attained in 1864 from the Swiss Club hut by Herr Schwarzenbach, and the *Thierälplistock* (11,132′) by M. Jacot.

Route H.

GESCHENEN IN THE VALLEY OF THE REUSS TO MEYRINGEN, BY THE GESCHENENTHAL.

The *Geschenenthal* is one of the most secluded valleys of the Alps, until lately quite neglected by travellers. No accurate information respecting it was forthcoming at the date of the first edition of this work, and but one glacier pass, known to the native chamois hunters, was believed to lead into it. It was visited by several members of our Alpine Club early in 1864, and later in the same season, some of the Swiss Club made the expeditions recorded in their Jahrbuch for 1865.

The valley opens at the village of *Geschenen* (3,619′), on the road of the St. Gothard (§ 30, Rte. A), and for about 1¼ hr. a frequented path mounts gently along the l. bank of the *Geschener Reuss* till, at Wicki (4,350′), it reaches the junction of a torrent flowing from NW. through a wild glen called *Voralpthal*, closed at its head by a rather large glacier—the *Wallenbühlfirn*. [If time be an object, the shortest way to the Stein Alp is through the Voralpthal, and over the ridge connecting the Vorder Sustenhorn with the Stückli-Stock. The pass, which may provisionally be called *Wallenbühl Pass* (8,717′), was traversed many years ago by M. G. Studer. On the N. side a steep and high ridge of rocks

leads down to the small *Kalchthal Glacier*, and in 2 hrs. more the Stein Alp is reached either by keeping along the rocks on the l. bank, nearly at a level with the Susten Pass, or by following the stream till it reaches the beaten track. and remounting nearly 1,500 ft. to the latter pass. From the l. bank of the Wallenbühl Glacier the summit of the *Spitzliberg*, or *Fleckenstock* (10,965′), was reached in 1864, by a steep and long snow couloir, by MM. Raillard and Finiger, with Kaspar Blatter and Ambrose Zgraggen.] From Wicki the path along the main branch of the Gesehenenthal maintains a direction somewhat S. of W., but mounts much more rapidly, and fully 1½ hr. is required to reach the only village in the valley.

Geschenen Alp (5,627′). Surrounded by high mountains in the coldest part of Switzerland, the climate of this sequestered spot is exceptionally severe, the houses being sometimes almost buried in snow for several months in winter. The only accommodation is at the curé's house. Realp may be reached from hence in little more than 5 hrs. by the *Lochberg Pass* (9,124′), lying due S. of the little village, and that would be the shortest way to the Furka. In 1864 Messrs. Stephen and Macdonald effected a more direct pass to the Furka over the ridge between the extreme S. corner of the Damma Glacier and the Tiefen Glacier, which was crossed in a SW. direction, entering the Urseren Thal a short way below the Furka Pass. In the same season Mr. Jacomb made another more difficult pass at a point farther W., and nearer the head of the Tiefen Glacier. The most remarkable object in view from Geschenen Alp is the great *Damma Glacier*, the lower end of which is less than a mile distant. Expecting to arrive at the Rhone Glacier, Mr. Tuckett, early in 1864, reached the ridge nearly at the same point subsequently attained by Mr. Jacomb, and found himself cut off from it by the Tiefen Glacier (Rte. F), not laid down on the older maps. The attempts to traverse the range of the Winterberg, between the N. part of the Damma Glacier and the Rhone Glacier, though made from the Geschenen side by Messrs. Stephen and Macdonald, and from the W. side by the two Weissenfluhs, were unsuccessful.

The pass long known, but used only by native hunters, that leads from the head of the Geschenenthal to the Stein Alp is the *Geschenenlimmi* (Stein Joch of G. Studer), about 10,170 ft. in height. About 1 hr. above the Geschenen Alp, the path along the l. bank of the torrent approaches the foot of the *Kehle Glacier*, which fills the head of the valley. Keeping to its l. bank, the way mounts rather steep slopes till it reaches a small lateral glacier that abuts against the ridge of the Sustenhorn. The course then lies nearly due N. to a snow col by which this glacier communicates with the great plateau at the head of the Stein Glacier, described in Rte. E in connection with the ascent of the Sustenhorn. For the way to the Stein Alp, see that Rte. This pass, which seems to present no serious difficulty, offers a new and convenient way for the mountaineer between the Bernese Oberland and the St. Gothard road. It was traversed in 1864, by Herr Schwarzenbach, and a few days later by Mr. Brooksbank. The latter describes it as an 'easy walk of 8¾ from the Stein Alp to Geschenen'—perhaps meaning Geschenen Alp. In the same year. Herr Hoffmann, having from the side of the Trift Glacier reached the col between the second and third peaks of the Thierberg, effected a very steep descent to the head of the *Kehle Glacier*, and so reached the Geschenen Alp in 4 hrs. from the summit. Between the latter pass and the Geschenenlimmi, the fine peak of the *Steinberg* rises to 11,247 ft., and must command a very fine panoramic view. The writer suspects that this is the peak which was ascended by Messrs. R. W. E. Forster and Hardy Dufour in 1861, and was taken by them for the Thierberg.

CHAPTER VIII.

ALPS OF NORTH SWITZERLAND.

Section 26.

FOREST CANTONS.

Route A — Cologne to Altdorf, by Basle, Olten, and Lucerne . . 147
Route B — Basle to Lucerne, by Zurich — The Rigi 157
Route C — Lucerne to Schwyz and Brunnen 168
Route D — Schwyz to Richterschwyl, by Rothenthurm . . . 171
Route E — Schwyz to Rapperschwyl, by Einsiedlen 172
Route F — Stanzstad to Altdorf, by Engelberg and the Surenen Pass . 173
Route G — Stanz to Altdorf, by Iseuthal . 175
Route H — Stanz to Altdorf, by Beckenried and the Sonnenberg . 176
Route I — Altdorf to Stachelberg, by the Klausen Pass . . . 177
Route K — Schwyz to Glarus, by the Pragel Pass — Ascent of the Glärnisch 178
Route L — Muotta to Altdorf . . . 181
Route M — Muotta to Stachelberg, by the Bisithal 182
Route N — Lachen to Schwyz or Glarus, by the Wäggi Thal . . 183

Section 27.

THE TÖDI DISTRICT.

Route A — Zurich to Stachelberg, by Glarus — Ascent of the Tödi 185
Route B — Stachelberg to Amsteg, by the Clariden Grat . . . 197
Route C — Basle to Dissentis, by Schaffhausen and Coire . . 202
Route D — Dissentis to Andermatt, by the Oberalp Pass — Sources of the Vorderrhein . . 217
Route E — Dissentis to Amsteg — Kreuzli Pass 219
Route F — Dissentis to Stachelberg, by the Sand Grat — Ascent of the Stockgron . . . 220
Route G — Ilanz, or Dissentis, to Stachelberg, by the Kisten Pass . 222
Route H — Ilanz to Elm, in the Sernft Thal, by the Panixer Pass . 223
Route I — Reichenau to Elm, by the Segnes Pass 224
Route K — Glarus to Ragatz, by the Sernftthal and Sardona Glacier 225
Route L — Glarus to Sargans, by the Sernfthal 228
Route M — Elm to Stachelberg, by the Richetli Pass . . . 229
Route N — Reichenau to Ragatz, by the Kunkels Pass . . . 229

Section 28.

SENTIS DISTRICT.

Route A — Winterthur to Rorschach, by railway 231
Route B — Uznach to St. Gall . . . 233
Route C — Rorschach to Sargans and Coire, by railway . . 234
Route D — Rorschach to Trogen, Gais, Appenzell, and Weissbad . 235
Route E — St. Gall to Alstädten . . 238
Route F — Weissbad to the Valley of the Rhine 239
Route G — Wil to Sargans, by the Toggenburg 240
Route H — Nesslau to St. Gall, by Urnäsch 241
Route I — Nesslau to Weissbad . . 242
Route K — Nesslau to Wesen — Ascent of the Speer . . . 242
Route L — Wildhaus to Weissbad, by the Kray Alp 243
Route M — Wildhaus to Wallenstadt, by the Churfirsten . . . 244

THE portion of the Swiss Alps included in the present chapter is not habitually known by a common designation, but is nevertheless more accurately defined by natural boundaries than any other of the main divisions of the Alps. If two travellers start in opposite directions from the Oberalp Pass at the head of the valley of the Vorder Rhine, and one of them should follow that stream to its entrance into the Lake of Constance, and beyond that lake in its course towards Basle, while the other descends along the torrent leading from the pass to Andermatt, and then accompanies the Reuss to its junction first with the Aar, and then with the Rhine, near Waldshut, they will on meeting there have accomplished between them the

circuit of the ranges which, for want of a collective name, are here described as the Alps of North Switzerland.

To the eye of the geologist the region so defined includes two essentially different portions. The first, that hereafter described as the Tödi chain, forms a continuation to the ENE. of the range of the Bernese Alps, from which it is separated only by the deep cleft that affords a passage to the Reuss from the foot of the St. Gothard Pass to the Lake of Lucerne. Here gneiss and other crystalline rocks are overlaid by secondary deposits, which are carried to a great height above the sea level. The second geological division of the region now under discussion includes the outer ranges, called by German topographers Voralpen, that encompass the Lakes of Lucerne, Zug, and Wallenstadt, and extend even to the shores of the Lake of Constance. Here the newer secondary and tertiary rocks exclusively prevail, and, with the single exception of the Glärnisch, the mountains do not surpass the limit of permanent snow.

The shores of the above-mentioned and some other smaller lakes abound with exquisite scenery, which has made this part of Switzerland one of the most frequented haunts of foreigners, and there is no lack of good accommodation in most of the places of common resort. The higher mountains, and especially the Tödi chain, offer abundant occupation to the mountaineer, but he must not expect to find here glacier scenery on a scale comparable to that of the Bernese and Pennine Alps. German is the universal language throughout the region described in this chapter, excepting in the valley of the Vorderrhein, where the native tongue is Romansch, an ancient dialect derived from the Latin, spoken throughout a great part of the Grisons.

SECTION 26.

DISTRICT OF THE FOREST CANTONS.

Under the above title is included the portion of the Alps surrounding the Lake of Lucerne, and extending thence to the valleys of the Linth and the Limmat. The mountains are in great part formed of tertiary rocks which have undergone denudation and other mechanical changes, so that the original direction of the ridges is rarely distinguishable, but on the whole the predominant course of the valleys is parallel to that of the Tödi chain. For the sake of convenience it has been thought better to include in this district the Pilatus, as well as the high mountains lying between the Surenen Pass and the Lake of Lucerne, though orographically these are outliers from the Bernese Alps, described in Chapter VII.

If the ardent mountaineer whose delight is to attain peaks untrodden or rarely touched by human feet, or to explore the inner recesses of the ice-world, should find the district now described wanting in attractions, the same will certainly not happen to the more pacific lover of nature, who here finds in the most varied combination all except the sternest elements of picturesque beauty. Neither can a reasonable amount of interest to the mountaineer be wanting in a district where he may find such peaks as the Glärnisch and the Uri Rothstock to exercise his favourite pursuit.

For mountain excursions the best head-quarters are found at Engelberg or at Vorauen. Many places on or near to the Lake of Lucerne are admirably situated for persons who seek the attractions of beautiful scenery, pure fresh air, with tolerably good accommodation, during the summer.

Route A.

COLOGNE TO ALTDORF, BY BASLE, OLTEN, AND LUCERNE.

	Eng. miles.
Mayence (by rly. or steamer)	114
Ludwigshafen (by railway) .	42
Basle (by rly. on l. bank) .	171
Lucerne	57½
Fluelen (by steamer) . .	24
Altdorf (by road) . . .	1½
	410

For travellers to whom a single day is not an important object, the most agreeable way from England to Switzerland is undoubtedly that by Belgium and the Rhine. In addition to the objects of interest on the road, there is the advantage of travelling a part of the way without fatigue or annoyance by the Rhine steamer, instead of the heat, dust, and racket of a railway journey. It is a further consideration that travellers by French railways who do not choose to incur the great delay and inconvenience of travelling by the ordinary slow trains are forced to pay first-class fare, even for servants, in the express trains. In this way travelling with a numerous family becomes much more expensive in France than in Germany. On the other hand, it is an inconvenience that the line of railway connecting Cologne and Basle is in the hands of several different companies, whose arrangements are often intended for other objects than the public convenience. It would appear that the trains on the German and Swiss railways have been at various times altered so as to prevent travellers from availing themselves of the steamers, or to force them to halt in certain towns. Travellers should not fail to obtain the latest intelligence as to the railway time-tables, and arrange their plans accordingly.

Persons who reach Cologne at 4 in the afternoon by express train from Brussels (in 6 hrs. 20 min.), or from Antwerp, and who intend to travel by steamer on the following day, do well to go on by Bonn by rly. on the same evening after a halt of 3 hrs., to visit the famous Cathedral. As the banks of the river between these two cities are uninteresting, nothing is lost by this arrangement, but if hurried they must leave Cologne by the evening express at 5 p.m., and reach Mayence in about 4 hours. They may sleep at that place, start again at 5.25 next morning, and reach Basle at 5.10 p.m., just too late for the evening train to Lucerne, but in time to reach Berne or Zurich on the same night.

Those who do not object to night-travelling continue their journey by the train which carries them in 13 hrs. from Cologne to Basle, reaching the latter city at 6 a.m., and before night may easily find themselves in the heart of the Swiss Alps.

The most direct course for travellers from England to Switzerland is by the morning express train leaving Cologne at 9 a.m., which enables them to reach Basle at 9.15 p.m. on the same day.

Those who wish to see Strasburg Cathedral on their way to Switzerland must either give additional time or travel by Paris. An express train carrying first and second class passengers leaves Strasburg at 3.48, and reaches the Central station at Basle, whence the trains depart for most parts of Switzerland at 7.7 p.m., and four slow trains perform the same service daily in 4 or 5 hrs. Another plan for visiting Strasburg *en route* is to turn aside at the Appenweier station on the rly. from Mannheim and Heidelberg to Basle, and cross the Rhine by the bridge at Kehl. Those not pressed for time may combine a visit to Luxembourg, Treves, and the battle-fields of the late Franco-German war, with a visit to Strasbourg, by taking the Great Luxembourg Railway from Brussels to Luxembourg—a morning train in 6½ hrs., and another in the afternoon in 6 hrs., but that line is not suited for

those who wish to proceed direct to Strasbourg or Basle.

In arranging his route by the various Rhenish railways, the traveller will not forget that Paris time is kept on all the French lines, and that this is about half an hour slower than the time kept on the German lines. These do not exactly agree, but the differences usually amount to no more than 4 or 5 minutes.

The Station of the Baden Rly. from Mannheim to Basle is in *Klein Basel*, a suburb of the latter city on the l. bank of the Rhine, and stands about ½ m. from the bridge. Those who would go on to Lucerne must proceed at once across the bridge to the Central Swiss Rly. Station (Central Bahnhof). Basle is described in § 23, Rte. A, where there is also a brief notice of the railway from thence to Olten. Here, at 23½ miles from Basle, the lines to Berne, Lucerne, and Zurich diverge from the same station. The line to Lucerne, after remaining for a few minutes united to that leading to Berne, turns to the SE. at the foot of the hill on which stands the Castle of Aarburg, and mounts very gently through a pretty valley watered by the Wiggern. The first place of any note, about 5 m. from Olten, is *Zofingen* (Inns: Rössli, Ochs), a very ancient little town, probably the Roman Tobinium. The remains of an extensive Roman villa with mosaics, medals, &c., have been discovered close at hand, and a country inn now stands on the adjoining ground.

Beyond the *Dagmarsellen* station there is a fine view of the L. of Sempach, backed by the mountains of the Lake of Lucerne. Nearly 5 m. farther, by the *Wauwyl* Station, is the *Wauwyler See*, a little lake known to Swiss botanists for the many rare marsh plants found in the adjoining peaty ground: amongst them are *Liparis Loeselii*, and *Lysimachia thyrsiflora*. The little walled town of *Sursee* (Inn: Sonne, with a collection of stuffed animals in the house) preserves, in the double-headed eagle carved above its gates, a record of the time when the country lay under the dominion of the house of Austria. It stands at the NW. end of the *Lake of Sempach*, whose name recalls one of the great events that put an end to that dominion. This is a pretty sheet of water nearly 5 m. long by 1½ wide, and 1,608 ft. above the sea, enclosed within an amphitheatre of hills whence at some points the Oberland Alps, or the nearer mountains of the Forest Cantons, are seen in the background. It contains many excellent fish, one of which—*Salmo Lavaeretus*—is peculiar to this part of Switzerland. The rly. passes along the S. shore of the lake, leaving to the rt. the village of Büttisholz, where an earthen mound bears the name Engländer Hübel, and is said to cover the bones of a body of Norman-English adventurers, or free lances, who, under Enguerrand de Coucy, after pillaging the neighbouring districts, were here defeated and slain by the Swiss in 1376. About 25 m. from Olten is the *Sempach* Station, fully a mile from the little decaying town which has given its name to one of the battles most famous in the story of Swiss independence. The battle of Sempach was fought on the hill about 1½ m. NE. of the town. Most readers are familiar with the account of the battle as given by Zschokke. Neither Greek nor Roman annals can show a more brilliant deed of martial heroism than that of the man of Unterwalden—Arnold Von Winkelried—who, when the Swiss hung back dispirited by the failure of every effort to break through the serried lances of the Austrian knights, opened the way that led his countrymen to victory and freedom by gathering with outspread arms the steel points of the enemies' weapons, and burying the 'sheaf of fatal Austrian spears' in his own bosom. Several crosses, and a

chapel built immediately after the battle, mark the site.

About 9 m. beyond the Sempach Station the rly. passes through a tunnel under the so-called Gibraltar Hügel to the Lucerne Station on the S. side of the Reuss. Those who wish to proceed at once by the late steamer should lose no time in crossing the wooden bridge that leads to the steamboat quay.

LUCERNE (Inns: Schweizerhof; Grand H. National; Luzernerhof; all on the quay, first-rate houses; Englishherhof; good, rather dear; H. du Rigi, good and reasonable; Schwan, good. The three last named front the lake near to the landing-place of the steamers; and all of them enjoy noble views of the lake and the neighbouring mountains. A little more distant, but very well situated, is the new Hôtel and Pension Beaurivage. It not uncommonly happens that travellers who do not write to secure rooms find all the above houses full, in which case they must seek quarters in some of the second-rate inns in the town, of which the following may be named: Waage, good; H. St. Gothard, new; Rössli; H. du Lac, good; H. des Alpes; Adler, Krone, both small but good; Hôtel de la Poste). Though but the 7th or 8th town of Switzerland in population, this is perhaps the most interesting to a foreigner from the unequalled beauty of its position, and from being the natural metropolis of the Four Forest Cantons from whose alliance Swiss independence dates its origin. The interior of the town contains comparatively few objects of interest, but its external aspect is singularly picturesque. The old walls are set at intervals with watch-towers of mediæval architecture, and the quaint wooden-roofed bridges recall an earlier and more primitive style than is found in the new quay with its stately hotels. A modern structure, crossing the Reuss just as it issues from the lake, somewhat mars the effect of the ancient Kapellbrücke—dating from 1300, which is passable only on foot. The projecting wooden roof is covered inside with ancient fresco pictures, curious but of no artistic merit, representing events in Swiss history, and in the legendary story of Saints Leodegar (Fr. Leger) and Maurice, the patrons of the city. About the middle of the Kapellbrücke rises the Wasserthurm, a very ancient tower, whose foundations are said to be of Roman origin, that served at once for defence and as a lighthouse to guide boatmen approaching from the lake. Hence the name of the city (Lucerna), whose German form is Luzern. The third bridge over the Reuss is more modern, and passable for carriages. A fourth footbridge, somewhat farther from the lake, is called Spreuer Brücke, or Mühlen Brücke, and resembles the Kapellbrücke in its construction. It contains within a Dance of Death painted by Meglinger in the 16th century.

The longest of all the bridges, called Hofbrücke, which was carried, not over the river, but across a shallow part of the shore, was removed, and the ground on which it stood reclaimed from the lake, in the construction of the new quay. At the end farthest from the river, formerly reached by the Hofbrücke, is the Hofkirche, or church of St. Leodegar. The interior contains some second rate works of art and a fine organ. The cemetery surrounding the church is enclosed by arcades commanding exquisite views, and the spot is a favorite resort for persons given to the contemplative mood.

Lucerne contains a remarkable work of art, perhaps the most appropriate and touching monument in existence. It is erected to the memory of the faithful Swiss Guard who fell on the 10th Aug. 1792, in the fruitless effort to defend Louis XVI. and his family in the attack made upon the Tuileries by the revolutionary mob of Paris. The monument, designed by Thorwaldsen, and carved in the live rock by Ahorn of Constance, represents a colossal lion

wounded to death, whose last effort is to protect with his massive paw a shield emblazoned with the fleur-de-lys of the House of Bourbon. Beneath are inscribed the names of 42 officers and the number of men who fell on that day. The position of the monument enhances its effect, and no stranger should pass through Lucerne without visiting it. The monument is known as Thorwaldsen's Löwen-Monument. Near at hand is Meyer's Rigi-Panorama, entrance 1 fr., which deserves a visit from those who are prevented by want of health or bad weather from enjoying the original. A small collection of Swiss stuffed birds and quadrupeds, extremely well mounted by M. Stauffer, entrance 1 fr., deserves the notice of naturalists.

The matchless beauty of its position, and the number of interesting expeditions within reach of Lucerne, naturally induce many strangers to make it their head-quarters during the summer season. Numerous boarding-houses, or *pensions*, offer good accommodation on moderate terms. It is difficult to make a selection among so many, but the following may be named as being well recommended. Pension Worley, formerly Æschmann; Fitzger, on the Felsberg, fine view; P. Victoria and P. Gibraltar on the rising ground above the l. bank of the Reuss. Many other establishments of the same kind are to be found in the vicinity of the town. The Pension Tivoli, with baths on the lake, is about ½ m., and that of Damman more than 1 m., out of the town, both near the road to Küssnacht. Of others rather more distant, those at the Seeburg and Sonnenberg have been recommended.

The neighbourhood of Lucerne abounds so much with beautiful points of view, that it is difficult, if not impossible, to exhaust the list. Of the shorter walks in the immediate neighbourhood, the Fluhmatt, and the walk called Alleinwinden on the N. side of the town, the Drei Linden on the Gizliberg, and the Gütsch and Gibraltar Hügel on the l. bank of the Reuss all deserve notice. Row-boats of various sizes are kept for hire. There is no fixed tariff. 'The ordinary charge is 75 cents per hour for the hire of the boat, and the same rate for each boatman.'—[B.]

All the hills near the town may afford scope for short excursions, and reward the trouble by new and beautiful combinations of scenery. The *Sonnenberg* to the SW., a prolongation of the ridge of the Gütsch, and the Dietschenberg to the NE., are both recommended; but probably the most interesting of the shorter excursions is that to the *Meggenhorn*, or the Ottenberg, lying in the angle between the bay of Küssnacht and that of Lucerne, and overlooking a great part of the lake. A visit to the ruined castle of Neu-Habsburg may be included in the same walk. Of the longer excursions from Lucerne by far the most frequently made is that to the Rigi, described in Rte. B; but of late years, since it has been made easy of access, the Pilatus has attracted every year an increasing number of visitors, and may best be described in this place.

The *Pilatus* is the rugged mountain mass, lying SSW. from the town, which is the most conspicuous object in all the views from the neighbourhood of Lucerne. It has many summits, of which seven principal peaks are distinguished by separate names. The highest, or Oberhaupt (7,290′), is followed in succession by the *Tomlishorn* (6,997′), *Esel* (6,962′), *Widderfeld* (6,747′), Matthorn (6,675′), *Klimsenhorn* (6,555′) and Gemsmättli (6,435′). The middle and lower portions of the mountain are clothed with forest, broken by large patches of exquisitely green mountain pasture, while the upper part consists mainly of steep crags, separated by deep clefts. On the S. side the forests have been much cut away, and the slope is less varied and picturesque than on the side facing Lucerne. Many paths may be followed, but the most interesting, especially in

the descent, is that by Hergiswyl, while the least agreeable, and that involving the hottest walk, is the path from Alpnach. A circuitous but picturesque way is that from Lucerne by Hergottswald and the Bründlen Alp, and this may be recommended to travellers who do not object to a walk of at least 6 hrs. As this way is little frequented, a guide is almost necessary; while the paths from Hergiswyl and Alpnach may be easily found by any one used to mountain-walking. A practised cragsman will have little difficulty in reaching the upper part of the mountain from Herrgottswald by some of the ravines that separate the higher peaks. Unpractised climbers should, however, keep to the paths. In 1857 a traveller wandering from the path fell over steep rocks and lost his life. A few years ago the ascent of the Pilatus was comparatively a difficult and laborious expedition, as there was no place on the mountain better than a poor châlet where a traveller could find food or shelter. The case has been much altered since an enterprising native of Unterwalden, named Blättler, made a good bridle-path from Hergiswyl to the upper part of the mountain, and opened a very good mountain Inn on the Klimsenhorn, at 6,288 ft. above the sea, and since another Inn has been built near the summit of the Esel.

On leaving Lucerne the road to Alpnach is followed for about 5 m., at first through a country rich with orchards and green meadows and comfortable farm-houses, till beyond Winkel the road skirts the shore of one of the many bays of the Lake of Lucerne, where the forest descends nearly to the water's edge. At *Hergiswyl* (Inn: Rössli, very fair) horses (at 10 fr. each), guides, and chaises-à-porteur (charge 20 fr.) are found for the ascent. A path mounts somewhat N. of E. through fields and fruit-trees, reaching in 1 hr. a little Inn at a place called Brünneli, and, a little beyond it, a seat commanding a beautiful view over the lake. During the ascent still wider views recur, until in 2 hrs. from Hergiswyl the traveller reaches the alpine pasture or *alp* of Fracmünd—derived from Mons Fractus, one of the ancient names of the Pilatus. The pedestrian who may have engaged a boy to show him the way thus far, may now send him back, as the Klimsenhorn Inn is henceforth constantly in view at the upper end of a rocky valley or ravine, which would not be easily mounted without the assistance of the good zigzag path made at the expense of M. Blättler, the landlord. The Inn, reached in 3½ to 4 hrs. from Hergiswyl, is very well kept and quite comfortable in fine weather, when not overcrowded. It stands in a depression or col on the upper ridge of the mountain, called Klimsenhorn-Egg. A naturalist may well make this his halting-place for several days, as the mountain, besides being considerably higher than the Rigi, offers many more objects of interest. The flora of the limestone Alps is here very well represented, and the botanist may find several rare plants, such as *Papaver alpinum* (in débris below the peak of the Esel), *Petrocallis pyrenaica*, *Campanula thyrsoidea*, *Androsace chamæjasme*, *Festuca Scheuchzeri*, &c.

To enjoy fully the panorama from the Pilatus, it is necessary to mount some one of the peaks which rise steeply out of the upper ridge of the mountain. The easiest of access is the Klimsenhorn, reached in 5 m. from the neighbouring Inn; but as this is overlooked by several higher points, most persons prefer the Tomlishorn or the Esel, both of which have been made accessible by good paths, with an iron holdfast here and there in spots where unpractised climbers may be liable to giddiness. The view from the Esel is commonly preferred. The way to it passes the Bellevue Inn, and the path leading to Alpnach. A zigzag path mounts from the Klimsenhorn-Egg in 20 m. to the base of the Chriesiloch, a chimney-like cleft

in the limestone rock which is climbed with the help of ladders. At the top the traveller emerges on the high bare ridge, at a short distance from the point where the track from Alpnach reaches the crest of the mountain. Here stands a new Inn, Bellevue, said to be well kept, and a worthy rival to that on the Klimsenhorn-Egg. This stands from 400 to 500 ft. higher, and is more convenient for those whose main object is to enjoy the sunrise from one of the higher peaks. Those who remain two or three days will prefer the older house, which is better for excursions. The Esel has the advantage of lying further E. than the other high peaks of the Pilatus, and thus commands a more extensive view of the Lake of Lucerne. The summit is now provided with a wooden pavilion, giving shelter against the keen morning air to a limited number of visitors.

The path from Alpnach-Gestaad (§ 25, Rte. A) is partly carried along a road made by a French Company who purchased the forests on the S. side of the Pilatus, and partly by a track carried along the margin of a gorge excavated in the slope of the mountain. 4 hrs. are required for the ascent from Gestaad, and 2½ hrs. for the descent.

The way from Lucerne by the Bründlen Alp involves a longer walk than either of the others. A good road leads to Krienz, a picturesque village within 3 m. of Lucerne. A rough track then ascends, mainly through forest, to *Herrgottswald*, a church with a little Inn adjoining, commanding a beautiful view. This is reached in 2 hrs. from Lucerne A circuitous path, mounting first W. and then S., attains, in 2½ hrs. farther, the *Bründlen Alp*, a group of châlets lying in a wild hollow below the higher peaks of the Pilatus. In the hollow lies the little lake which has played a great part in the legendary history of the mountain. Whether the name Pilatus suggested the legend, or was derived from it, is uncertain, but the popular belief led Pontius Pilate to this spot, where after many wanderings he was said to have drowned himself. The clouds that often gather round the top of the mountain, and the storms that seem to issue from the hollow of the Bründlen See, were long thought to originate in the struggles of his unquiet spirit. On the face of the precipice above the Bründlen Alp is the opening of a cavern with a vertical pinnacle of rock beside it that looks like a colossal statue. The popular fancy holds this for a likeness of St. Dominic, and the cavern, which is qnite inaccessible, is called Dominiksloch. The Bründlen Alp possesses a remarkable echo. As it lies some way west of the topmost ridge, it is not seen by most visitors, and to this must be attributed the singular inference of some English travellers, who were led to deny the existence both of lake and cavern because in repeated ascents of the mountain they never happened to light upon them. In 1½ hr. from the Bründlen Alp the traveller may reach the summit of the Tomlishorn or that of the Esel.

It is a disputed question whether the view from the Pilatus is to be preferred to that from the Rigi. The latter in the writer's opinion is superior as a panorama, being more central in regard to the lakes, which are the main ingredients in the wonderful series of pictures that is there unfolded. The Pilatus, on the other hand, is nearer by 11 m. to the Oberland Alps, which are here far more striking objects than they appear in the SW. horizon from the Rigi. The mountain itself is more alpine in character, and gives a far better idea to a stranger of the aspect and vegetation of the upper region than the gentle slopes and rounded summits of the Rigi. The ascent may well be recommended to all travellers, but especially to those who do not intend to view the great peaks of the Alps still nearer at hand from some commanding point, such as the Faulhorn, Niesen, Brévent, &c. The geo-

logist will not fail to contrast the contorted strata of the limestone of this mountain with the regular stratification of the conglomerate of the Rigi.

As the journey from Lucerne to Altdorf is almost always made by the Lake of Lucerne, it will be convenient to give here some account of that most picturesque of all European lakes. The *Lake of Lucerne* is called in German *Vierwaldstätter See*, or Lake of the Four Forest Cantons, because its waters wash the shores of the four Cantons whose alliance in the early part of the 14th century was the origin of the existence of the Swiss nation. The scepticism of modern historians has called in question the authenticity of the records, and even the very existence of some of the heroes of Swiss history. A moderate critic may well admit the probability that myth has been interningled with the streamlet of fact that has reached us through popular tradition; but it is abundantly certain that in an age when nearly all Europe lay prostrate under feudal tyranny a scanty population of mountaineers here successfully struggled for freedom, first driving out the local oppressors and destroying their strongholds, and afterwards encountering in the field, and defeating against overwhelming odds, the chivalry of Germany and France. The recollection of such deeds, freshened by a reperusal of Schiller's noble drama of 'Wilhelm Tell'—the best guide to this district—adds no little to the enjoyment of the exquisite scenes amidst which they were acted; and the man whose spirit is not deeply stirred within him as he visits these shores must be alike insensible to the sublime in nature and in man.

The form of the L. of Lucerne is singularly irregular, and must be embarrassing to those geologists who believe that the lake-basins of the Alps have been excavated by great glaciers. To the orographer it appears to lie in four different valleys, all related to the conformation of the adjoining mountains. The central portion of the lake lies in two parallel valleys whose direction is from E. to W., the one lying N., the other S. of the ridge of the Bürgenstein. These are connected through a narrow strait, scarcely ½ m. wide, between the two rocky promontories called respectively Untere and Obere Nase. It is not unlikely that the southern of these two divisions of the lake—called *Buochser See*—formerly extended to the W. over the isthmus whereon stands the town of Stanz, thus forming an island of the Bürgenstein. The W. end of the main branch of the lake, whence a comparatively shallow bay extends to the town of Lucerne, is intersected obliquely by a deep trench whose SW. end is occupied by the branch called *Alpnacher See*, while the NE. branch forms the long Bay of Küssnacht, or *Küssnachter See*. It will not escape notice that these both lie in the direct line of a valley that stretches with scarcely a break parallel to the chain of the Bernese Alps from Interlaken to the L. of Zug. At the E. end of the Buochser See, where the containing walls of the lake-valley are directed from ENE. to WSW., it is joined at an acute angle by the Bay of Uri, or *Urner See*, lying in the N. prolongation of the deep cleft that gives a passage to the Reuss, between the Bernese chain and the Alps of N. Switzerland. The breadth of these various sections of the lake is very variable, but is usually between one and two miles Its mean height above the sea is 1,437 ft., and the greatest depth hitherto measured 1,140 ft.

If its dimensions and its singular formation forbid the Lake of Lucerne to rival the stately grandeur of those of Geneva or Garda, it surpasses these and all others in Europe in the almost infinite variety of its scenery, and in the exquisite contrasts which they afford. A few minutes suffice, as the traveller traverses its surface, to exchange a picture of the softest beauty,

for the sternest aspects of alpine wildness. The vegetation of its shores is widely different from that of most of the Swiss and all the Italian lakes. The vine is here absent, and there is little sign of tillage; but the villages that stand here and there, where the rocks leave some space between their base and the water's edge, are surrounded by orchards and meadows of the brightest green, and shaded by magnificent walnut-trees, whose ample foliage contrasts forcibly with the dark hues of the primæval pine-forest that clothes the middle height of the mountains.

The hurried traveller who can dispose of but one day at Lucerne, and who is not bound for the road of the St. Gothard, should take the early steamer to Fluelen, engage a boat thence to Bauen, visit the Grütli, and return by evening steamer from Brunnen or Beckenried, unless he prefer to take a carriage from the latter village to Stanzstad, and return by the steamer from thence to Lucerne. Those who have not ascended the Rigi on the way from Zurich (Rte. B) may reach the summit, viâ Brunnen, Schwyz, and Goldau (Rte. C), after leaving Lucerne in the morning, and returning from Fluelen by boat.

Those who reach Fluelen by the afternoon steamer, and sleep at Altdorf, may return to Lucerne on the following day by the Surenen Pass (Rte. F), starting very early, and engaging a carriage from Engelberg to Stanzstad. No other motive than necessity can, however, justify a traveller in hurrying over scenes that require time and quiet to be thoroughly enjoyed.

The Lake of Lucerne is well provided with means of conveyance by steamer, as well as by boats that may be hired at all the villages on its shores. Three or four steamers start daily in summer for Fluelen (the port of Altdorf), touching at Wäggis, Vitznau, Beckenried, Gersau, and Brunnen. There are three departures daily for Stanzstad and Alpnach-Gestaad, and an equal number for Küssnacht. Travellers will not fail to obtain the latest time-bills, and arrange their plans accordingly.

On quitting the quay at Lucerne, the traveller, looking along the bay that connects the town with the main body of the lake, sees the long ridge of the Rigi to the l., rising above the nearer hills, and to the WSW., between the rocky summits of the Vitznauer Stock on the l., and the Nieder Bauen on the rt., the distant Alps of Uri and Glarus culminating in the snowy peak of the Tödi. As he advances, the Titlis is visible for a short time, nearly due S.; and as the valley of Sarnen is opened to the l. of Pilatus, he gains a passing glimpse of some of the peaks of the Bernese Oberland, including the Wetterhörner and the Schreckhorn. The Bay of Küssnacht, opening to NE. beyond the point of the Meggenhorn, attracts but little attention, the views towards Alpnach being far more interesting. The *Bürgenstein* (4,077′), although not more than 2,600 ft. above the lake, rises so abruptly as to form a striking feature in the scenery. In contrast to its dark aspect, and to the rugged outline of the Pilatus in the background, the N. shore of the lake, along the lower slopes of the Rigi, is bright with orchards and picturesque farm-houses. In this warm spot the chestnut and the fig-tree thrive better than they usually do in N. Switzerland.

Wäggis (Inns: Lion d'Or, close to the landing-place; Concordia, fairly good; and several *pensions*) is the chief place on the S. side of the Rigi, and frequent resort of tourists. The next stopping place of the steamer is *Vitznau* (Inn: Pension Pfeiffer), the terminus of the Rigi Railway (see next Rte.). Beyond this the main branch of the lake appears completely closed to the E. by the bold range whose chief summit is the *Vitznauer Stock* (4,750′), whence the promontory called Obere Nase stretches into the lake. A narrow opening to the S. is seen between this and the Untere Nase, a corresponding pro-

montory forming the E. end of the Bürgenstein. This leads into the branch of the lake called Buochser See. The scenery is here completely changed; the spectator appears to be enclosed by mountains hitherto unseen, and it is impossible to guess in what direction there may be an exit. To the rt. lies *Buochs* (Rte. H), in a hollow between the Buochserhorn and the S. side of the Bürgenstein, while nearly due S. is the steamboat station at

Beckenried (Inns: Sonne; Mond; H Feller; visitors taken *en pension*), whence travellers may proceed by land to Stanzstad, or to Seelisberg; see Rte. H. The steamer now crosses the lake diagonally to the little isolated village of

Gersau (Inns: H. and *Pension*, Müller; Sonne; both good), lying on a steep slope on the N. shore, along which a path little better than a goat-track leads to Brunnen. A path to the Rigi has been made practicable for mules (see Rte B). The secluded position of this little community accounts for the fact that up to the time of the French revolution it formed an independent state. owing no political tie to the neighbouring cantons, and governed by its own local assembly. The present population of the entire commune is about 1,700. After rounding a headland some short way beyond Gersau, the traveller enjoys a new and beautiful picture. The level valley of the Muotta, beset with farm-houses and fine trees, extends to the town of Schwyz, behind which rise the bold peaks of the Mythen. As the steamer approaches the promontory of Treib, the far-famed Bay of Uri, or Urner See, opens abruptly to the S., seen throughout its whole length, and in about 2 hrs. from Lucerne the boat reaches

Brunnen (Inns: H. Waldstädter, new large house; Adler; Rössli; Hirsch; besides several *pensions*), a place of some traffic, as it lies in the most direct route from most parts of Germany to the road of the St. Gothard. It is deservedly resorted to by strangers in search of mild climate and beautiful scenery. Charges for boats and carriages exorbitant. The road to Schwyz and Arth is described in Rte. C. The warehouse, called Sust, has two rude and very ancient frescoes. That representing the three confederates of the Grütli is said to date from 1315, when the three original cantons (Urkantone) renewed their oath of alliance after the battle of Morgarten. Lucerne joined the league only in 1532.

[Either from Brunnen or from Fluelen most travellers take a boat to visit the *Grütli*. It lies on the E. side of the promontory of Treib, 1½ m. from Brunnen, and nearly 5 m from Fluelen. On the way the traveller should remark the bold rock of Mythenstein, corruptly called Wytenstein, rising out of the lake near the point of the opposite promontory. It bears the following German inscription—'Dem Sänger Tell's, Friedrich Schiller; Die Urkantone, 1860.' No poet has ever had a nobler monument, as none ever better earned a nation's gratitude. Keeping along the rocky shore, the traveller observes a point where the declivity presents a gentler slope, and a green meadow planted with trees offers easier access from the lake. This is the *Grütli*, or Rütli, where, on the night of the 7th October 1307, Walter Fürst of Attinghausen in Uri, Werner Stauffacher of Steinen in Schwyz, and Arnold an der Halden of Melchthal in Unterwalden, each leading 10 trusty followers, formed the confederation that freed their native cantons from a foreign yoke, and founded the independence of Switzerland. The popular fancy has consecrated the event by a legend. Three springs, said to have burst out from the spot where the leaders stood, are carefully enclosed and shown to all visitors. The Grütli has lately been purchased by a public subscription raised in Switzerland, and thus saved from desecration.]

Passengers for Seelisberg (Rte. H) hire a boat at Brunnen to convey them to Treib. It is judicious to make a

distinct agreement with the boatmen of Brunnen before starting on the lake.

A new inn (Hotel und Kurhaus Axenstein) with pleasure-grounds, accessible by road, about 2 m. from Brunnen, is well spoken of: more distant, and much higher up (about 4,200′), is another new inn and *Pension* on the Stossberg (charge 4 fr. a day, without wine) commanding a very fine view. From the inn it is easy to reach in 1½ hr. the summit of the *Frohnalpstock* (5,787′), with a noble view of the lake.

The Bay of Uri is the portion of the lake where the seenery attains the character of sublimity. It occupies the northernmost and deepest portion of the great cleft of the Valley of the Reuss, which has cut through the Alpine ranges from the St. Gothard Pass to the neighbourhood of Schwyz. From its E. shore the mountains rise in almost bare walls of rock to a height of from 3,000 to 4,000 ft. above the water. The two highest summits are the Frohnalpstock above mentioned, and the *Axenberg* (6,830′). Between them the steep glen or ravine of Riemenstalden descends to *Sissingen*, the only hamlet on that side of the lake. On the opposite or W. shore, the mountains attain still greater dimensions. The *Nieder Bauen* (6,323′) is succeeded by the *Ober Bauen* (6,964′), and farther S., above the ridge of the Scharti, appear the snowy peaks of the Blackenstock (9,686′) and the Uri Rothstock (9,621′). In the centre opens the valley of the Reuss, backed by the rugged summits of the Uri Alps, of which the most conspicuous is the Bristenstock (10,089′).

A slight scar is pointed out on the rocky face of the Frohnalpstock, and marks the spot whence a huge fragment of rock fell into the lake in 1801. The wave caused by the shock overflowed a part of the village of *Sissingen* (Rte. L), destroyed 5 houses, and drowned 9 of the inhabitants.

On the W. shore, opposite Sissingen, is *Bauen*, the solitary hamlet seen on that side, near the opening of the Isenthal, an alpine glen, lying between the Uri Rothstock and the Ober Bauen. See Rte. G.

At the foot of the Axenberg, whose bare rocks descend elsewhere without a break to the water's edge, is seen a little shelf of rock whereon stands an oratory. This is known as *Tells Platte*, and marks the spot where the popular hero of Swiss story sprang ashore from Gessler's boat in the storm, when the rudder had been entrusted to his strength and skill. Seen from the lake it is impossible to trace the narrow path along the face of the Axenberg by which alone land communication was formerly kept up between Brunnen and Altdorf. A very fine new road has been completed at the cost of the Federal Government along the E. side of the Bay of Uri, intended to connect the road of the St. Gothard with the N. of Switzerland.

In less than an hour from Brunnen the steamer reaches *Fluelen* (Inns: Adler; Kreuz; W. Tell; all close to the landing-place), a small village rendered unhealthy by the marshy ground formed about the head of the lake. Works have been undertaken to deepen the channel of the Reuss, and so drain the land on either bank. Here travellers for the St. Gothard take their places in the diligence, or engage carriages; those who do not go farther may proceed at once in an omnibus to *Altdorf* (Inns: Goldener Schlüssel, good civil people; Adler, also good; Löwe, fair; Sonne), a small town almost completely destroyed by fire in 1799. It is best known as the scene of the most dramatic incident in the story of William Tell. A fountain surmounted by his statue, in the middle of the town, marks the spot where he is believed to have stood, when forced to aim at the apple placed on his son's head, as the only chance of saving the child's life. Tradition has fixed on a tower ornamented with rude frescoes as the site of the lime-tree to which the child was

bound; but the tower is certainly of earlier date than the event, and there is more reason to admit that a second fountain, about 200 ft. from the first, occupies the place of the lime-tree, said to have been cut down in 1567. The church contains some tolerable pictures, of which the most noticeable is a Nativity attributed to Vandyke (?).

Altdorf is the capital of Uri, the poorest and least populous of the Swiss cantons, yet, perhaps from regard to the memory of Tell, it has been admitted to rank first among the primitive cantons, or Urkantone. This is a place at which many alpine routes converge, most of which are noticed in this § ; the road of the St. Gothard is described in § 30, Rte. A.

Travellers are sometimes dissuaded from engaging a boat to convey them from Fluelen to Bauen, Grütli, or Treib, by the reported dangers of the navigation of the Bay of Uri. It is true that at times, when the stormy S. wind rushes down the valley of the Reuss, it is dangerous to venture in a boat upon this branch of the lake, but in settled weather there is no more reason for apprehension here than elsewhere.

Route B.

BASLE TO LUCERNE, BY ZURICH. THE RIGI.

	Eng. miles
Olten (by railway) . . .	23⅔
Aarau	8½
Zurich	31¼
Horgen (by steamer) . .	9
Zug (by road)	11½
Immensee (by steamer) . .	6½
Küssnacht (by road) . .	2
Lucerne (by road or steamer)	7½
	99¾

The best arrangement for a Swiss tour which is to include the chief lakes is to take Zurich on the way to Lucerne, as the Lake of Zurich appears tame to one who sees it after enjoying the higher beauties of the L. of the Forest Cantons. A traveller pressed for time may reach Zurich in one day from Mayence, Frankfort, or Mannheim, by following the Baden Railway to Waldshut, on the rt. bank of the Rhine (§ 27 Rte. B), and entering Switzerland by the short branch rly. connecting Waldshut with the Turgi Station on the line from Aarau to Zurich. Should he wish, however, to see Basle, he will stop at the Klein Basel station, and cross the Rhine to enter the city; in which case he will do well to take the Swiss Central Rly. to Olten and Aarau, and the Nordostbahn from thence to Zurich.

At the Olten Station, 23½ m. from Basle (§ 23, Rte. A), the line to Aarau turns sharply to the l. or ENE , keeping along the rt. bank of the Aar, which here has a very sinuous course. Above the opposite bank is the ruined castle of Alt Gösgen, where Thomas von Falkenstein, a robber knight of infamous memory, is said to have first plundered and then starved to death, the unfortunate people who fell into his hands.

Aarau (Inns: Wilder Mann; Löwe, dear, not good ; Ochs; Storch), 8½ m. from Olten, a busy manufacturing town contains little of interest to a stranger except the public library, rich in printed books and MSS. connected with Swiss history. Zschokke, the historian and novelist, lived and died here in 1848. The *Gislifluh* (2,539′), 2 hrs. from the town, commands a view of the Alps extending in fine weather, as it is said, to Mont Blanc. As the rly. passes through a tunnel under part of the town, travellers who do not stop see very little of it. Here the carriages of the Swiss Centralbahn are exchanged for those of the North-east Rly. leading to Zurich, Romanshorn, &c.

About 7 m. from Aarau the rly. passes the station of *Wildegg*, where a mineral spring of intensely saline and bitter taste, containing iodide and bromide of sodium, attracts some visitors. The waters are chiefly used in conjunction

with those of the more famous springs of *Schinznach*, adjoining the rly. and 9 m. from Aarau. The waters there supply baths which, after those of Baden, are the most frequented in Switzerland, especially by French and Swiss visitors. There is a large establishment where patients board and take the prescribed course of baths in the adjoining building. Sulphur, and salts of soda and magnesia, are united in these waters, which are said to be very efficacious in the treatment of cutaneous diseases, gout, old wounds, &c. Their temperature at the source is 96° Fahr. About 1 m. distant is the Castle of *Habsburg*, the cradle of the imperial family of Austria. The room occupied by Rudolph, the first emperor of the race, is still pointed out. The neighbourhood is rich in sites of historical interest (see below). The Gislifluh may be reached from here as easily as from Aarau. There is a third mineral spring in the vicinity, near the village of *Birmensdorf* on the rt. bank of the Reuss. The waters are saline and purgative. Roman coins and other remains point to their early celebrity.

The next station to Schinznach, only 1½ m. distant, is that of

Brugg or Bruck (Inns: Rössli; Rothes Haus), an ancient walled town which has produced several men of literary eminence.

'The country around Brugg is interesting, both in a geographical and historical point of view. In the plain, a little below the town, three of the principal rivers of Switzerland which drain the N. slopes of the Alps from the Grisons to the Jura, the Limmat, the Reuss, and the Aar, form a junction, and, united under the name of the Aar, throw themselves into the Rhine about 10 m. below Brugg, at a place called Coblenz.

'Close upon this meeting of the waters, and on the triangular tongue of land between the Aar and Reuss, stood *Vindonissa*, the most important settlement of the Romans in Helvetia, as well as their strongest fortress on this frontier, on which they placed their chief dependence for maintaining this portion of their empire. Its works extended 12 m. from N. to S. Yet scarcely any portion of it now appears above ground; traces of an amphitheatre, a subterranean aqueduct which conveyed water from Brauneggberg, 3 m. off, foundations of walls, broken pottery, inscriptions, and coins, have been turned up by the spade from time to time, and its name is preserved in that of the miserable little village of *Windisch*.'—[M.]

It is to the Huns under Attila, followed by the Franks under Childebert, that the utter destruction of this great city and fortress has been attributed.

About 1 m. from the town stood the famous Abbey of *Königsfelden*, founded in 1310 on the spot where the Emperor Albert was murdered two years before. The present buildings contain little of interest, excepting the church, where lie the bodies of the knights who fell on the imperial side at Morgarten and Sempach, whose portraits are rudely pictured on the walls. The bones of several princes of the imperial house were removed in 1770. The stained glass windows, representing the murder of the emperor and other events of the same period, have survived the many vicissitudes which the building has undergone. The person who has charge of the building keeps for sale Roman antiquities found on the site of Vindonissa. Little more than 2 m. beyond Brugg is the *Turgi* Station, where passengers arriving by a short branch rly. connecting Waldshut in the Duchy of Baden with Zurich and the N. of Switzerland join the main line from Aarau. About 3 m. farther is

Baden, a very ancient town, adjoining the most frequented watering-place in Switzerland. There is an Hotel (Bahnhof) at the Rly. Station, and several Inns in the town (Waage, Linde, Löwe), but most travellers go to the Baths. The town-hall was once the place of meeting of the Swiss Confederation. The castle whose ruins crown

the adjoining hill was in the middle ages an important stronghold belonging to the House of Austria, till in 1415 it was taken and burnt by the Swiss.

The Baths are about ½ m. from the town near the banks of the Limmat, and are divided into two establishments: Grosse Bäder, frequented by the higher class of visitors; Kleine Bäder, by those of inferior social position. At the first are several Hotels (Stadthof, best; Schiff; Freihof; Verenahof; Limmathof; Schweizerhof, &c.). The waters of Baden have been known and prized since the time of the Romans, to whom they were known as Thermæ Helveticæ. They burst out from numerous sources at a very high temperature, varying from 104° to 122° Fahr., and are so abundant that each of the chief hotels is directly supplied with baths, without the necessity for leaving the house. They are chiefly valued for the treatment of gout, rheumatism, and scrofula, being taken internally as well as by baths, douches, etc. The number of visitors has amounted in some seasons to 15,000. The habits of the place are more quiet and involve less of social intercourse than at most of the German watering-places. Being little above the level of the Limmat, near its confluence with the Aar and the Rhine, there are few places in Switzerland that lie so low as these baths—only 1,076 ft. above the sea-level. In clear weather distant views of the Alps may be gained from the neighbouring hills, e.g. the Baldegg (1,877′) and the Hochwacht (2,808′). The latter is one of the summits of the *Lägern*, a range of hills on the rt. of the Limmat, forming the extreme E. termination of the Jura range, though this is usually supposed to be limited by the junction of the Aar, Reuss, and Limmat near Brugg.

The rly. passes under the castle hill, anciently called Stein zu Baden, keeping to the l. bank of the Limmat. On the opposite bank may be seen the modernized remains of the Cistercian Abbey of *Wettingen*. The church contains a sarcophagus where the body of the murdered Emperor Albert lay for some time. The painted glass and carved stalls are said to deserve inspection. Roman remains abound in this part of Switzerland. A curious inscription is built into the wall of the parish church of Wettingen. About 7 m. from Baden is *Dietikon* (Inn: Goldener Löwe). The valley of the Limmat was the theatre of war between the Austrians and French in the bloody campaign of 1799. About 15 m. from Baden, or nearly 40 m. from Olten, the rly. reaches

Zurich (Inns: Hôtel Baur, and Pension Baur au Lac, two first-rate establishments belonging to the same proprietor; the first, in the centre of the town, best suited for passing travellers; the second, on the lake, is quieter, better for those remaining some days or weeks—both clean, charges not cheap, but not unreasonable—pension at 8 to 10 fr., according to rooms occupied, except from 1 July to 15 Sept.; H. Bellevue, on the rt. bank, fine view, very good, charges same as at H. Baur; Züricherhof, formerly Couronne, much enlarged and improved, well managed and convenient for tourists; Schweizerhof, good and reasonable; Schwerdt, near the central bridge, said to be rather dear; Falke or Faucon, good and cheap; Storch; Schwan; Sonne; Rössli; H. Scheller: the last five are chiefly commercial). This is the centre of the chief manufacturing district of Switzerland, and contains one of the most thriving and active communities in the country, but does not offer such attractions for strangers as many other Swiss towns. It is divided by the Limmat into two unequal portions—the Grosse Stadt on the l., and the Kleine Stadt on the rt. bank—both of which partly front the lake at the point where the river issues from it. The lesser stream of the *Sihl*, which rises in the Alps of Schwyz, and flows parallel with the Lake of Zurich for 18 or 20 m., often approaching within a mile of its shores, joins the Limmat at the

N. end of the town, so that the Grosse Stadt is built on a peninsula enclosed between the two streams. The only building of much interest is the chief church, or Gross Münster, a Romanesque building of the 10th or 11th century, with a crypt, cloisters, and architectural details interesting to the antiquary. It was the scene of Zwingli's preaching, and his house is still pointed out—No. 185 in the Grosse Stadt. The Town Library is considerable, and contains amongst its numerous MSS. autographs of Lady Jane Grey, Henry IV., J. J. Rousseau, Zwingli, and Frederick II. of Prussia. Among various curious objects preserved in the same building is an interesting collection of fossils, amongst which is the famous reptilian skeleton—the *homo diluvii testis* of Scheuchzer. In the same building is the collection of the Antiquarian Society, especially rich in objects of interest from the Pfahlbauten, or Lake habitations, which have recently excited so much general attention. The illustrations of the implements, food, clothing, and arts of the earliest inhabitants of the country may almost vie in completeness with those furnished in the case of the Romans by the Museo Borbonico at Naples. The Eidgenössische Polytechnicum is a fine modern building on the NE. side of the town. Many distinguished men, some of them political exiles, have been professors in the University here during the comparatively short period since the foundation of the institution. The New Botanical Garden on the site of one of the ancient bastions is prettily laid out, and is one of the best points for enjoying the view over the lake, which is especially beautiful at sunset.

The position of Zurich is very pleasing, and the view of the lake (though more contracted) may be compared with that from Geneva. The banks rise in swelling hills covered with villages and villas, and in clear weather the distant ranges of the Glarus and Uri Alps form a beautiful background to the picture. The Glärnisch is conspicuous to the SE., and turning gradually to the rt. this is followed by the Biferten Stock, and the Tödi, which is the last to catch the rays of the setting sun. Then comes the Scheerhorn, between which and the Windgelle are the bold but much nearer summits of the Mythen; next is the Bristenstock, followed by the Blackenstock and the Urirothstock. The view is closed to the l. by the green summit of the Ütliberg. Of the many agreeable excursions from the town, the following may be mentioned:

An Inn on a hill, called Auf der Waid, by the old road to Baden on the rt. bank of the Limmat, commands one of the best views over the lake. It is reached on foot in 1 hr. from the town: charge for a cab 3 fr., or if more than two passengers 4½ fr. The *Ütliberg*, one of the summits of the Albis range, probably commands the finest panoramic view of the Swiss Alps that is to be found at any point of such moderate elevation — only 2,864 ft. The very fair Inn at the summit, apt to be overcrowded on Saturday evenings, may be reached in 2 hrs. from Zurich. Leaving the town by the Bleicherweg and passing the hamlet of Enge, it is necessary to avoid a road that turns to the l. and leads along the W. side of the lake. After a slight ascent the traveller reaches a foot-bridge over the Sihl, and soon finds a foot-path up hill that takes him to the Inn called Albisgütli, where horses (charge, 4 fr.) are let for the ascent. The track is well marked; on the way is a monument to F. Dürler, an active mountaineer, and one of the earliest climbers of the Tödi, who lost his life from a careless slip in descending this hill. To the rt., near the top, is a short cut up the rocks fit only for practised climbers. The panorama includes, in addition to that seen from lower stations near the town, the Sentis Alps in Appenzell, the Piz Linard and other peaks of the

Lower Engadine, the Titlis and Sustenhorn, and all the principal summits of the Oberland Alps.

A railway is now open between Zurich and Zug, and thence to Lucerne, convenient for those who do not care to see the country. Most travellers choose the way by Horgen noticed below; but there is a third very agreeable road, practicable in a light carriage but pleasant for the pedestrian. This lies over the range of the *Albis* hills, which run parallel to the lake for 10 or 12 m. The road leaves the W. shore of the lake at Wollishofen, crosses the Sihl about 5 m. from Zurich, and mounting in zigzags for 3½ m. more, attains the summit, where a fine view is gained at a country inn (Ober-Albis). The *Hochwacht* (2,887′), commanding a wider panorama, is ½ hr. distant. Descending by wooded slopes, the road passes *Hausen*, a thriving village, near to which is the frequented hydropathic establishment called *Albisbrunn*, prettily situated about 2,000 ft. above the sea. By this road Zug is about 18 m. from Zurich.

The *Lake of Zurich*, owing to its uniform and moderate breadth, presents the appearance of a great river, as, while it is fully 26 m. long, it is rarely more than 2 m. broad. Its mean height above the sea is 1,341 ft., and its greatest depth about 640 ft. The shores everywhere bear traces of cultivation and industry, not contrasted with the wilder features that appear in most of the alpine lakes. Steamers start seventeen times a day for Horgen and Richtersehwyl, touching at many intermediate points, and nine times daily for Rappersehwyl. (See § 27, Rte. A.)

Passengers for the Rigi usually leave Zurich by the earliest steamer, which reaches *Horgen* (Inns: Meyerhof; Löwe; Schwan) in less than ¾ hr. Carriages for Zug cost—with one horse, 10 fr.; with two horses, 16 fr.; besides *trinkgeld*. Places by diligence may be taken on board the steamer. [The Hochwacht (see above) may be reached from Horgen in less time than from Zurich.] The old road mounted by a short but steep ascent to the ridge, called Horgereck, which divides the lake from the valley of the Sihl, while the new road makes a circuit, rejoining the other before reaching the *Sihlbrücke*, a roofed bridge, by which the Canton Zug is entered. A hilly road carried through pretty scenery, and giving occasional glimpses of the higher mountains, passes *Baar*, a village with a curious ossuary, where the Albis road is joined, and finally descends towards the Lake of Zug. The diligence takes 2½ hrs. from Horgen to reach

Zug (Inns: Hirsch, good; Löwe, smaller and cheaper, on the lake; Bellevue; Heeht; Krone). Refreshments at the rly. station. Trains to Zurich and Lucerne 6 times a day. This ancient little town is the capital of the smallest of the Swiss Cantons. In this district there prevails a very curious custom by which the surviving members of a family show their respect for the dead. The skulls are extracted from the graves after a certain number of years, and placed in an ossuary or bone-house, attached to a church, each having a label with the name and date of birth and death. It is said that in some families the skulls are kept in glass cases in the house. A large ossuary may be seen at the Church of St. Michael outside the town. A landslip occurred at Zug in 1435 which carried a whole street, with a part of the town walls, into the lake. The chief magistrate of the Canton and 44 others (some say 59) were drowned. Another less fatal accident of the same kind is recorded in 1549.

The landlord of the Bellevue has opened a *pension* at a pretty place called Felsenegg, on the hill above the town: charge, 4 to 6 fr. daily. Rather farther is Sehönbrunn, an establishment directed by Dr. Hegglin for the treatment of invalids by hydropathy, whey, or goats' milk. It stands at 2,515 ft. above the sea, and is reached in 1½ hr. from the town.

The best points of view are the

tower of the Capuchin Convent in the town, the little castle of *Cham* at the N. end of the lake, or the *Zugerberg*, (3,222′) E. of the town.

The *Lake of Zug* is a sheet of water nearly 9 m long by 3 m. broad, 1,369 ft. above the sea, and about 1,280 ft. deep. Its main characteristic is an aspect of stillness that contrasts in a marked way with the busy air of the banks of the neighbouring L. of Zurich. The Rigi, which here shows a much bolder front than towards the L. of Lucerne, rears a vast precipitous slope along the S. end of the lake, and seems to brood over its quiet shores. Travellers who do not intend to halt between Zurich and the Rigi or Lucerne should engage their places in Zurich, or on board the steamer, direct to Arth or Immensee, or else to Lucerne by Küssnacht, and so avoid paying porters for the carriage of their luggage at each intermediate station. Rigi tourists will usually send their heavy luggage to Lucerne or Schwyz. They already find at Zug persons who offer their services as guides, and undertake to procure horses, &c., and are destined to undergo a renewal of these attentions throughout the whole route. There is a good road traversed by omnibuses from Zug to Arth (about 9 m.) along the E. shore of the lake (see Rte. C), but most travellers prefer the steamer which starts three times a day, touching first at Immensee, and then at Arth. By far the larger number of travellers who reach the Lake of Zug from Zurich make the view from the Rigi the first object of their journey; but others content themselves with the view of that mountain, and proceed at once to Lucerne. In that case they land from the steamer at *Immensee* (Inn: H. du Rigi, fairly good and reasonable). An omnibus takes passengers across the neck of land that separates the Lakes of Zug and Lucerne. The distance is scarcely 2 m. About half-way the road is carried through the *Hohle Gasse*, or 'hollow way,' memorable as the spot where Tell, after escaping from Gessler's boat on the Bay of Uri, hastened to lie in wait for the oppressor, and slew him by a bolt from his unerring cross bow. The spot is scarcely to be recognised since the trees and banks were cleared away in the construction of the new carriage road. A little farther, on the l., is the remaining tower of Gessler's Castle, and a slight descent then leads to

Küssnacht (Inns: Seehof; Schwarzer Adler), a large village at the end of that branch of the L. of Lucerne to which it gives its name. Steamers start twice a day for Lucerne, reaching the town in 50 min. There is a road along the lake traversed by the diligence from Schwyz, and passing near the castle of New Habsburg, noticed in Rte. A.

The Rigi is an extensive mass of mountain occupying the greater part of the space lying between the lakes of Lucerne, Zug, and Lowerz. It owes the advantage of its position, not only to having no higher mountains in its immediate neighbourhood, but to the fact that in almost every direction a sheet of water at its base rests between the spectator and the distant panorama.

The mountain is in great part composed of *nagelflue*, a conglomerate belonging to the miocene period, which has undergone violent disturbance since its original deposition. The geologist will not fail to examine the neighbourhood of the Rigi Scheidegg, where he will see the order of the strata actually reversed—the cretaceous and eocene rocks overlying the miocene conglomerate! The flora is not particularly rich. *Epipogium Gmelini*, *Lathrea squamaria*, and some other uncommon plants, are found on the slopes towards the L. of Lucerne, and the beautiful *Dianthus superbus* is plentiful on the steep slopes N. of the Rigi Staffel.

The most interesting points on the Rigi are the highest summit, or *Rigi Kulm* (5,905′), *Rigi Rothstock* (5,545′), *Rigi Staffel* (5,210′), and the

Rigi Scheidegg (5,406′). Nearly the whole of the upper part of the mountain serves as pasturage for cattle.

No other mountain in Europe is so much visited by strangers, it being said that from 20,000 to 25,000 make the ascent annually, and nowhere else is there such abundant provision for their reception. It must be owned, even by those who prefer spots where they encounter less of crowd and bustle, that in this instance the general choice is justified by the extreme beauty of the position, and by the comparative ease with which the excursion may be made. From the eight principal villages near the base of the mountain safe paths lead to the top, all but one passable for horses; and two large hotels close to the summit, besides several lower down, offer accommodation for the night. The concourse of visitors has been further increased by the opening of a railway from Vitznau, on the Lake of Lucerne, to the Rigi Staffel, further noticed below. It is wise to order rooms by electric telegraph, and even to desire an answer stating the number of each room so secured. It is in every way advisable to arrive at the summit some time before sunset, to secure the evening view, which is more often clear than at sunrise, and is in itself equally beautiful. The lover of quiet may do well to view the sunset from the Rigi Rothstock, reached in little more than ½ hr. from the Kulm, but the sunrise should always be viewed from the actual summit.

The tariff for horses, porters, &c., has been frequently altered, and sometimes altogether suspended, in consequence of disputes between the local and cantonal authorities. It is believed that the rates named below are now in force, but the latest information must be sought in the inns near at hand. Every boy in the country can show the way to the top, and is glad to do so for 1 or 2 fr.

Horses. From Küssnacht, Immensee, Goldau, or Wäggis, to the Kulm, for each horse	10 fr.
For returning next morning to the place of starting	6 fr
For descending to any other of the above places	10 ,,
From Gersau to the Kulm	12 ,,
For returning thither next morning	10 ,,
Chaises-à-porteur, or *Tragsessel.* For each bearer—	
From Küssnacht, Immensee, Arth, Goldau or Wäggis to the Kulm	6 ,,
For returning next morning to the place of starting	5 fr. 30 c.
From Arth or Goldau to the Staffel	5 fr
For returning	4½ ,,
From Wäggis or Küssnacht to the Staffel	4½ ,,
For returning	3 fr. 80 c.
From Gersau to the Kulm	8 fr.
For returning	7 fr. 30 c.
From Gersau to the Scheidegg	4½ fr.
For returning	3 fr. 80 c.

N.B. For the ascent three or four bearers must be taken, according to the weight of the traveller. In descending, two bearers suffice.

Porters. For a weight not exceeding 20 lbs.—	
From Küssnacht or Immensee to the Kulm	2 fr.
From Küssnacht or Immensee to the Staffel	1½ ,,
From Arth, Goldau, Gersau, or Wäggis to the Kulm	3 ,,
From Arth, Goldau, or Wäggis to the Staffel	2 ,,
From Gersau to the Staffel	2½ ,,

To a person in the least used to find his own way, a guide is unnecessary; but unpractised mountaineers should keep to the beaten track. Some extra covering should be taken, as the nights and mornings are often cold.

With a view to assist travellers in choosing the most suitable course, a short notice of each of the paths leading to the summit is here given, with the preliminary remark that the paths by Küssnacht or Wäggis are the most direct for the ascent from Lucerne, those by Immensee or Arth for that from Zug, those by Goldau or Lowerz for that from Schwyz, while that from Gersau is best suited for passengers from Altdorf.

1. *By Küssnacht.* This way is sometimes preferred by travellers coming from Lucerne who mean to descend by Wäggis, but is rather hot in the afternoon, and not very interesting. It is best suited for those who descend the mountain in bad weather, and whose

main object is to reach Lucerne as soon as possible. The ascent by this and the next path is rather shorter and steeper than by the others; 3¼ hrs. suffice for the ascent, and about 2¼ for the descent The track turns to the rt from the road to Immensee as it leaves the village of Küssnacht, and, passing near the ruins of Gessler's Castle, mounts gently for about ½ hr. when a sign-post with the words 'Auf die Rigi' points to the path that begins to mount more rapidly. In 1 hr more it reaches the Seeboden Alp, where refreshments tempt the passing traveller. A little farther this path joins that from Immensee. On approaching the upper part of the mountain it bends somewhat to the rt, and ascends diagonally across steep grassy slopes, above which are seen the rocky ledges that extend along the N. face of the mountain. These are higher and steeper to the l. where they face the Lake of Zug, while towards the rt. they come to an end at a point close to the *Rigi Staffel* (5,209′), where the upper plateau of the mountain is reached in less than 3 hrs. from Küssnacht. All the regular tracks leading to the summit unite opposite to a large inn called Staffelhaus, where very fair accommodation is found at prices rather lower than at the Kulm. It is, however, decidedly inferior in position, and except when the other houses are full few travellers will be tempted to halt here. An easy ascent of ½ hr. in a NE. direction, at rt. angles to that hitherto followed, leads from hence to the Kulm.

In ascending from Küssnacht or Immensee the mountaineer may take a rough, steep, and slippery path, turning to the l. from the bridle-path about 20 min. below the Staffelhaus; this leads direct to the very top of the mountain, saving ¼ hr. in the ascent. It is, however, little used, and not easily found without a guide, being intermixed with sheep or goat tracks that are likely to lead a traveller into difficulties.

2. *By Immensee.* This is the shortest course for travellers reaching the mountain from the side of Zug, and is especially suited for those who ride, as the path from Arth is not fit for horses. It is longer by ¼ hr. than that from Küssnacht, but as it lies in great part along a projecting ridge of the mountain it is much exposed to the afternoon sun. It joins the Küssnacht path, near to the Seeboden Alp, as mentioned above. The traveller may lunch at a neat châlet, where he finds good bread, milk, butter, &c., just below the steeper part of the ascent.

3. *From Arth.* This and the two paths next described have the advantage of lying on the shady side of the mountain, and being little exposed to the afternoon sun, a point of some consequence at the beginning of a Swiss tour. Many will think it a further advantage that the view of the L. of Lucerne and the chain of the Bernese Alps is not seen till near the top of the mountain, and is thus enhanced by the charm of surprise. The path from Arth is more shady and rather shorter than that from Goldau, but is also very rough and scarcely fit for horses. On leaving the village of Arth (Rte. C) the path crosses some meadows, passing the chapel of St. George, and on reaching the foot of the mountain at once commences a steep ascent by a very rough path through a forest, amidst rocks and the roots of trees. At a small waterfall there is a path to the rt. which must be avoided. The true course continues to mount nearly due S. till in little more than 1 hr. it reaches a rough inn called Unter Dächli, where the path joins the bridle-track from Goldau. This is a favourable point for viewing the Rossberg. The effects of the great catastrophe of 1806 (see Rte. C) are still distinctly traceable. The course of the regular path from hence to the summit is circuitous, but for the most part very easy. It follows a line of pilgrimage chapels or oratories that extend to the little church of S. Maria

zum Schnee, commonly called *Klösterli.* By the 8th oratory, called Malchus Kapelle, ½ hr. above Unter Dächli, the path from Lowerz joins the united path from Arth and Goldau. A little higher up, at the Heilige Kreuz Kapelle, where an iron cross is fixed in a block of stone, a path turns to the rt. and mounts by a nearly direct course to the Kulm. This may suit a mountaineer pressed for time, but is not fitted for ordinary tourists, being steep and fatiguing. In 1 hr. from Unter Dächli the bridle-path reaches the Klösterli, where three or four monks remain throughout the year, being sometimes confined within doors for many weeks in winter. The church is frequented by pilgrims, especially on the 5th August. Here are several small Inns, the best of which are the Schwert and Sonne, affording rough but clean quarters, where some invalids come to drink goat's whey, and live *en pension* at 3½ fr. a day. About ¼ hr. above the Klösterli is the *Bruderbalm*, a cavern said to be worth a visit for its stalactites. The traveller is tempted to make a short cut to the rt. to reach the Kulm, but the rough ground and slippery slopes of grass prevent him from gaining time by so doing. It is better to follow the beaten track, which in about ¾ hr. from the Klösterli reaches the Staffelhaus, where the traveller gains the first view of the L. of Lucerne, and joins the other routes leading to the Kulm. From 3¼ to 3½ hrs. are required for the ascent from Arth.

4. *From Goldau.* The ascent to Unter Dächli is a little longer and much easier than from Arth. This is one of the best routes for those who ride, as the path is well kept. From 3½ to 3¾ hrs. are required.

5. *From Lowerz.* This is even easier than that last mentioned, and is said to offer the gentlest ascent of any of the Rigi paths. The road from Lowerz to Goldau (Rte. C) is followed for about 1 m. The ascent then begins, and after passing a place called Fallenboden, mounts gradually, in part through forest, till as above mentioned it joins the Goldau path at the Malchus Kapelle.

6. *From Gersau.* This is the longest but the most beautiful of all the paths leading to the Rigi. It offers the most direct way for those coming from the road of the St. Gothard by the lake steamers, but may well be taken from Lucerne by travellers who do not object to a détour. The ascent commences through fields and meadows behind the village of Gersau (Rte. A). At the pastures of Brand there is a fine view into the ravine of the Tiefentobel. On the rt. is a pretty cascade of the Röhrlibach, and a steeper ascent amidst fallen rocks leads first to the Giebelgüter, and then, in 1¼ hr. from Gersau, to a rough but clean country Inn at *Unter Geschwänd*, commanding a very fine view to the S. and SE. The path continues to mount by a chapel dedicated to St. Joseph to the Ober Geschwänd. Here, a path to the rt leads to Lowerz, while the true course lies a little W. of N. traversing a succession of alpine pastures, and in 2¾ hrs. reaches the *Rigi Scheidegg.* Here, near the summit of the E. plateau of the mountain, stands a large Hotel commanding a very fine view. The accommodation and attendance are said to be very satisfactory, and the charges moderate. Many Swiss families remain here *en pension*, paying from 5 to 6 fr. daily, without wine. This would be the best head-quarters for a naturalist wishing to remain some days on the mountain. An undulating path leads WNW. over mountain pastures in 1 hr. to the Klösterli, or S. Maria zum Schnee (see No. 3— Path from Arth), whence the Kulm is reached in 1¼ hr. more, or fully 5 hrs.' average walking, exclusive of halts, from Gersau. The distances by this route are erroneously given in most guide-books.

7. *Descent to Wäggis.* By whichever of the paths hitherto described a

traveller may reach the summit of the Rigi, there can be no doubt that he ought in fine weather to prefer the descent by the S. side of the mountain either to Wäggis or Vitznau The exquisite views over the L. of Lucerne leave on many minds quite as deep an impression as the panorama from the summit. The ascent by this way is not equally to be recommended. The traveller has his back turned to the lake, and his face towards the glowing rocks and steep slopes that have felt the heat of the sun through the warm hours of the day.

From the Staffelhaus, where, as already mentioned, all the bridle-tracks leading to the Kulm converge, the pedestrian about to descend to Wäggis may make a slight détour of ½ hr. to the summit of the *Rigi Rothstock*, which commands a large part of the L. of Lucerne not seen from the Kulm, and is perhaps a preferable point for enjoying the sunset. A gentle descent over bright green pastures leads in 1 hr. from the Kulm to the Kaltbad; but before reaching that establishment the pedestrian should not omit to turn aside in order to reach a point called the Känzeli, marked by a wooden cross and one or two benches, commanding a view which, in the writer's opinion, surpasses that from the Rothstock, and, in some respects, even that from the Kulm. This is the extreme W. angle of the mountain, and overlooks the four arms of the L. of Lucerne that meet in the central basin lying between the spectator and the Pilatus. This spot, whence, as from an advanced bastion, the beautiful shores of the lake are seen stretched out at the traveller's feet, while the opposite mountains are backed by the peaks of the snowy chain, is but 10 minutes' walk from the *Rigi Kaltbad* (4,728′). The Hotel and hydropathic establishment has been rebuilt of late years on the same plan as the hotel at the Rigi Scheidegg mentioned above, which stands higher by 600 or 700 ft. This commands the finer view, and is more expensive—*pension* 6 fr. daily, exclusive of charges for room, whey, wine, attendance, and baths. A spring of very pure water, apparently free from mineral salts, issues from the rock at a constant temperature of 41° Fahr. The effects of pure mountain air and water, with regular living, in some cases combined with baths, or with goat's milk or goat's whey, are found to be very beneficial to a certain class of invalids, especially those suffering from the effects of intermittent fever, disordered nerves, and requiring tonic treatment. The house is better fitted up than most of the others on the mountain, and is often quite full. The descent lies for some way SSE., and after leaving to the l. the track to Vitznau, reaches the Hochstein, where the path passes under a natural arch formed by a huge block of nagelflue resting on two others, and bears to the rt. or WSW. along steep ledges of rock, attaining in less than 1 hr. from the Kaltbad the Heiligenkreuz Kapelle, an oratory where a bench near at hand invites travellers to rest and enjoy the view, while beer and other refreshments are offered at an adjoining shed. The descent becomes less steep as the track reaches the meadows and pastures planted with fine walnut and chestnut trees that cover the lower slopes of the mountain. Little traces remain of a singular event which, according to Ebel, occurred in 1795. The strata of the nagelflue, as is plain to every observer, alternate between harder beds formed of well-cemented conglomerate, and softer layers wherein reddish earth and sand predominate. It appears that at the date in question some of these softer layers, whose exposed section is seen about the middle height of the mountain, had become thoroughly impregnated with water either from rain or landsprings, and yielded to the enormous pressure of the superincumbent rocks. The materials were squeezed out in the form

of a slowly-moving stream of reddish mud, that occupied a whole fortnight in descending to the bank of the lake. Wäggis (Rte. A) is less than 1 hr. distant from the Heiligenkreuz Kapelle, or about $2\frac{3}{4}$ hrs. from the Kulm. $3\frac{1}{2}$ to $3\frac{3}{4}$ are required for the ascent.

8. *Railway from Vitznau.* The least frequented of all the paths leading to the Rigi Kulm was that from Vitznau until a Swiss engineer started the bold project of carrying a railway up the steep slope of the mountain, and selected that village as the terminus. It has for some time been open as far as the Staffelhaus, mentioned above, and may probably be extended to the Kulm during the present season. The length is somewhat under 4 miles, and the difference of height nearly 4,000 ft., so that the average slope is about 1 in 5, but in parts as much as 1 in 4. There is little masonry, the rails being in most places sustained on iron columns. A central driving wheel with deep cogs works in a massive central rail, and a single large passenger carriage is propelled before the engine. The pace is slow, and it is said that in case of need the carriages can be instantly stopped. Four trains start daily—ascent $1\frac{1}{4}$ hr., descent 1 hr.—and additional trains are despatched whenever a sufficient number of travellers present themselves at the terminus. On the slope of the mountain above Vitznau are two very extensive caverns—the Waldisbalm, from 300 to 400 yards deep, and another still more considerable called Stigelfattbalm.

Vitznau is a small village with a good country Inn, now touched by all the lake steamers. The pedestrian may reach it by a rough but very picturesque path leading along the lake by the promontory of the Obere Nase from Gersau, or a much easier path in the opposite direction from Wäggis.

Rigi Kulm. Whichever of the paths above described may have been preferred by the traveller, he will, if he keep to the beaten track, reach the highest grassy ridge of the mountain, or Rigi Kulm, by the track that mounts NE. from the Staffelhaus. In $\frac{1}{2}$ hr. he reaches two large buildings that stand some 60 or 70 ft. below the actual summit. The lower of the two is the old Hotel; the other, unfortunately so lofty as to interfere somewhat with the view, is a new Hotel opened in 1856, and belongs to the same proprietor. Although they accommodate more than 200 visitors, they are often full. Making every allowance for the incessant pressure of a crowd of hungry tourists, the establishment cannot be said to be well kept. Complaints on the score of want of cleanliness and foul smells are often heard, and it has been hinted that the sheets are not always dry. The food is tolerable; the prices those of a first-rate hotel. There is a table-d'hôte supper about $\frac{3}{4}$ of an hour after sunset, and most persons go to bed early with a view to early rising in the morning, the main object of the expedition being to see the sunrise from the summit. Like many other matters depending on the weather, this is a lottery in which there are a good many absolute blanks—days when the top of the mountain is enveloped in cloud or drizzling rain; a good many prizes—when the view is seen to perfection: but a number larger than either when the spectacle is more or less imperfect. A little previous study of the map along with the engraved panoramas will much assist the traveller in recognising the almost countless peaks that are included within the range of view. Most persons make themselves tolerably familiar with the principal summits on the preceding evening. It would serve no purpose to enumerate these here, and it may suffice to say that the view extends WSW. as far as the Dole, near Geneva, 120 English miles distant, and in the opposite direction to some of the mountains above Bregenz on the Lake of Constance, fully 75 m. from the spectator. Of no less interest than the panoramic view are the singular

phenomena occasionally visible at, or very soon after, sunrise. One, which is not very uncommon, occurs when the plain of Switzerland is covered with a sheet of vapour, while the chain of the Alps remains clear. The appearance of the sun sets the vast sea of cloud in motion. The masses gradually rise; a current in the direction of the Alps sometimes sets in, and the clouds seem to break against the E. face of the mountain like billows on a rocky shore. The effect is more striking from the higher and steeper crags of the Pilatus, provided it be viewed from some point that commands a clear view to the W. and NW. It is well known to mountain travellers that when shadows are thrown upon a neighbouring mass of cloud, each spectator sees his own shadow surrounded by a halo of coloured rings. This may often be seen on the Rigi. A rarer phenomenon occurs when, owing to some peculiar condition of the atmosphere, at the instant of sunrise a blue image of the summit of the mountain, with the outlines of the persons who stand on the ridge, is seen suspended in the air without the formation of any visible haze or cloud. It is sometimes said that the image in this case is magnified, but this, as the writer has assured himself, is an illusion arising from the impression that the image is more distant than it really is.

A wooden stage at the very top of the mountain enables those who ascend it to overlook the roof of the new Hotel. A horn is sounded in both hotels half an hour before sunrise, and no time is to be lost by those who would not miss the prize of their excursion. If not provided with ample covering, visitors are tempted to break through the printed regulation which forbids them to use the blankets as extra wraps. An early breakfast succeeds the sunrise spectacle, and in two or three hours the 200 or 300 people who are generally congregated at the summit are scattered in various directions, often not to meet again.

Route C.

LUCERNE TO SCHWYZ AND BRUNNEN.

	Eng. miles
Küssnacht (by road or steamer)	7½
Arth (by road)	5¼
Schwyz	9
Brunnen	3¼
	25

The excursion from Lucerne to Schwyz is often taken in connexion with the tour of the lake, and it is easy to go by the route here described and return to Lucerne by the lake steamer, or vice versâ. It may also be easily combined with the ascent of the Rigi described in the last Rte.

A diligence conveys in 4 hrs. passengers to Schwyz who prefer to travel all the way by land.

The road between Lucerne and Immensee is briefly described in the last Rte. When the steamer on the L. of Zug happens to be available, most travellers use that conveyance to Arth, unless they should have engaged a carriage from Küssnacht to Schwyz or Brunnen, in which case they follow the road by the lake-shore along the N. base of the Rigi.

Arth (Inns: Adler, best, but foul smells; H. du Rigi), 3¼ m. from Immensee, lies on the shore of the L. of Zug at the W. end of the valley of Goldau, formed by erosion from the conglomerate that constitutes the ridge of the Rigi to the S. and that of the Rossberg to the N. An omnibus is in waiting to take passengers to

Goldau (Inn: Rössli, good), a distance of 1½ m. [Travellers going on foot from Immensee to Goldau may take a path which leaves Arth to the l., and rejoin the high road at the hamlet of Ober Arth, thus saving a few minutes.]

Goldau is chiefly known for its connection with one of the most memorable geological catastrophes whose history has been accurately recorded. The German term *bergfall* has been applied in this work to cases, of which a few have been handed down in cotemporary records, and several others rest on traditional evidence, where a considerable mass of mountain has fallen in a sudden and violent manner, as contradistinguished from the more limited operations to which the English term *landslip* seems more appropriate. The name *Rossberg* or Rufiberg is applied, in the same way as that of Rigi, to a mountain tract rather than a single defined mountain. It includes the whole tract of high land lying between the Lakes of Zug and Ègeri, whose highest summit is the Wildspitz (5,190′), and is bounded on the S. by the valley of Goldau. Its geological structure resembles that of the Rigi, the upper part being mainly formed of thick beds of miocene conglomerate, called nagelfluc, overlying strata of softer and less coherent materials. In the part bordering on the Goldauerthal the strata dip to the S. at an angle of 25° with the horizon. Local records speak of several slighter landslips which had occurred on the slopes to the N. of Goldau, but the catastrophe that has acquired a melancholy celebrity occurred on Sept. 2, 1806, and a description by an intelligent eyewitness, Dr. Zay of Arth, was published soon after the event.

An extraordinary fall of snow in winter, followed by a wet summer, seems to have softened the inferior strata, whereupon fissures formed in the overlying nagelfluc, and the conditions being thus prepared, the symptoms of the approaching event soon became evident. During several hours the warnings were continued by the falling or sliding down of blocks of stone, the utterance of mysterious sounds that seemed to issue from the interior of the mountain, a manifest disturbance of the trees that clothed its slopes, and finally by the flight of birds that sought a refuge on the opposite ridge of the Rigi. A number of the inhabitants of the valley sought safety in flight, but a larger number remained until a crash, like the voice of doom, announced the moment at which a huge mass of the mountain was loosened from its foundations, and fell, shattered into fragments, over the devoted valley. Huge blocks of stone were hurled through the air, reaching across the wide valley to the lower slopes of the Rigi, and in a few minutes a large tract of populous and fruitful country was covered with a mass of ruin. The village of Goldau and three neighbouring hamlets were covered with confused piles of rock and earth from 100 to 200 ft. in thickness, under which they still remain buried. Of the inhabitants 433 lost their lives, as well as 24 strangers, and those who survived the day were left utterly destitute. According to a rough estimate, the portion of the mountain that fell measured a league in length, 1,000 ft. in breadth, and 100 ft. in thickness. The west end of the L. of Lowerz was filled up by the bergfall, and several smaller pools have been formed amidst the irregular masses of débris that cover the valley. For a long time the aspect of the site remained barren and ruinous, but in the course of half a century verdure gradually spread over the bare surface, trees sprung up in the crevices, and it is interesting to the geologist to remark how nearly the present appearance approaches to that of many spots in the Alps where we have reason to believe that similar events occurred at some more or less remote period. The road to Schwyz lies for some distance amidst and across the remains of the bergfall, and the present village of Goldau stands on the site of, and immediately over, the destroyed village. In about 3 hrs. from Goldau a pedestrian may reach the part of the mountain which was left exposed by the fall of the overlying mass.

Lowerz (Inn: Adler), at the W. end

of a small lake bearing the same name, was partly destroyed by the fall of the Rossberg, and the waves raised by the masses of rock that fell into the water broke over the island of Schwanau, and swept away several houses at the opposite end of the lake, 3 m. distant. The castle of *Schwanau*, standing on the larger of the two islands in the lake, was destroyed in the first rising of the Swiss confederates in 1308.

About 3 m. beyond Lowerz is the village of *Seewen* (Inns: Kreuz; Rössli; Stern), lying in a depression between the Urmiberg, which forms the E. extremity of the Rigi range, and the base of the Mythen. The village gives its name to the Seewen limestone, which is geologically an equivalent of the English flint-chalk. The chalybeate springs attract hither a certain number of invalids, who usually lodge *en pension* at either of the two last-named inns, paying 4½ fr. a day. By the road the distance is 2 m., or rather less by foot-path, to

Schwyz (H. Hediger; Rössli; both good and reasonable, but old-fashioned; Hirsch), the chief town of that little canton which, owing to the leading part taken by its people in the first struggle for independence, had the honour of giving its name to Switzerland. Though tourists generally pass through it without a halt, it is an interesting place, and preserves in its general aspect, and in the style of its buildings, an air of old-world simplicity that is scarcely to be seen elsewhere in Switzerland. The town lies 1,686 ft. above the sea at the base of the Mythen. The parish church is Italian in character from the quantity of marble with which it is decorated, and the numerous pictures and statues, due to artists from the Canton Tessin. In the adjoining cemetery is a monument to Aloys Reding, who headed his countrymen in their desperate resistance to the French invasion in 1798. The Council Hall in the Rathhaus, with the portraits of forty-three chiefs of the republic (landammänner), and a tower containing the archives, which date from the origin of the Swiss Confederation, deserve notice.

The mountaineer should not fail to make the ascent of the *Mythen*. The mountain so called consists of two sharp rocky peaks divided by a deep cleft, whence the appropriate name Mitre. The higher, or Grosse Mythen, is 6,244 ft., the lower, or Kleine Mythen, 5,955 ft. in height. The Grosse Mythen may be ascended in 3 hrs. From Holzegg to the top, where there is a little inn, a good new path makes a guide needless. The mountain is a prolongation of the range of the Vitznauerstock, Hochfluh, and Urmiberg, being composed mainly of newer secondary rocks, especially Seewen limestone. Towards the summit this encloses in its folds a mass of nummulitic limestone, whose limits are sharply defined.

The road to Brunnen (Rte. A), traversed by omnibuses in connection with the steamers on the L. of Lucerne, lies through a rich tract containing many scattered hamlets and solitary farm-houses. If history did not serve as a lesson and a warning to posterity, it would be well to draw a veil over the events of 1798—when the armies of France, entering the territory of their unoffending neighbours with the name of liberty on their banners, stifled in blood the ancient independence of Switzerland—and the still more tragical vicissitudes of the following year, when the soldiers of France, Austria, and Russia devastated in turn with fire and sword the valleys where for 500 years the native herdsman had not seen the presence of an enemy. It is asserted that at the end of the century one-fourth of the surviving inhabitants of the Canton Schwyz were reduced to beggary.

[Pedestrians going from Arth to Schwyz, who wish without much delay to see more of the remains of the fall of the Rossberg than is visible from the carriage-road, may take a path from Ober Arth to the hamlet of

Steinerberg, which traverses the lower slopes of the mountain right across the track of the bergfall; they may then descend to Steinen on the road from Rothenthurm to Schwyz (Rte. D). Travellers from Arth to Brunnen who are pressed for time, or do not care to see Schwyz, may save more than a mile by following a cross-road from Seewen to the hamlet of Ibach, lying on the main road from Schwyz to Brunnen.]

Route D.

SCHWYZ TO RICHTERSCHWYL, BY ROTHENTHURM.

	Post stunden	Eng. miles
Steinen . .	1¼	3¾
Rothenthurm .	1½	4½
Biberbruck .	1⅓	4⅓
Richterschwyl .	1½	4½
	5¾	17¼

This route between Schwyz and the L. of Zurich is not in itself interesting, but is often taken by those who wish to visit in the same day Morgarten and Einsiedlen, both of which lie near to the post-road. A diligence plies twice daily between Richterschwyl and Schwyz, and also between Richterschwyl and Einsiedlen.

Leaving Seewen on the l. the road is carried along the base of the hills from Schwyz to Steinen (Inn: Rössli), the birthplace of Werner Stauffacher. A chapel with rude frescoes marks the site of his house. [Here a pedestrian may turn to the W. and reach Arth, as mentioned in the last Rte., by a path that crosses the lower slopes of the Rossberg, a walk of about 2 hrs.] The high road, commanding fine views over the valley of Goldau, mounts along the stream called Steiner Aa to the chapel of Ecce Homo, and thence to the village of Sattel. Here a road, passable for chars, turns to l. and leads along the NE. side of the *Lake of Egeri* to Zug, a distance of about 11 m. This passes over the battle-field of Morgarten, the earliest of the struggles in which the Swiss mountaineers overcame the best troops of Europe. When Leopold of Austria advanced in 1315 with a powerful army, said to number 20,000 men between knights and men-at-arms, to punish the Swiss for having destroyed the Austrian strongholds, and driven out the bailiffs whose oppression had become intolerable, the Swiss leaders, warned, as tradition asserts, by a message fixed to an arrow shot out from the Austrian lines, occupied with their small force of 1,300 men the heights of Morgarten at the S. end of the L. of Egeri. The enemy advanced along the flat ground between the hills and the shore, when the Swiss, after throwing the enemy's army into confusion by a discharge of rocks from above, completed the disorder by a furious charge, and drove them in disgrace from the field with prodigious slaughter. A chapel dedicated to St. James, and another at the village of Haselmatt, commemorate this Marathon of Swiss history. The road to Zug by the villages of Ober Egeri and Unter Egeri is not very interesting. Instead of returning to the post-road at Sattel, a pedestrian may take a path across the hills from the village of Haselmatt and rejoin the road to Richterschwyl at Altmatt, nearly as soon as if he had kept to the main road from Schwyz.

From Sattel the post-road mounts along the SE. side of the hill of Morgarten. Here, under their landamman Aloys Reding, the descendants of the victors of Morgarten encountered in 1798 the invading French army under General Schauenbourg nearly on the same ground where their fathers fought the Austrians. Swiss valour again prevailed, and the enemy was twice driven back; but the loss of the small band of patriots was so heavy that they were unable to renew the fight against the overwhelming forces brought against them.

Rothenthurm (Inn: Löwe, 'dirty and

extortionate,' [M.]) stands on high ground near the head of an affluent of the Sihl called the Biber. The road keeps to the rt. bank across a marshy tract passing *Altmatt*, where the foot-path from the banks of the L. of Egeri rejoins the post-road. About 1½ m. farther, at *Biberbruck*, the road crosses to the l. bank and joins the carriage-road from Einsiedlen (Rte. E), 3½ m. distant. About 1½ m. from Biberbruck is *Schindellegi* (2,484′), where the road crosses the Sihl. Here the men and women of Schwyz successfully resisted the first advance of the French army in May 1798. The way from hence to the L. of Zurich lies almost altogether down hill: the road commands some pleasing views over the lake, but is not so interesting as that by the Etzel described in the next Rte.

Richterschwyl (Inns: Drei Könige, was the best; Engel) is a large village on the Lake of Zurich visited many times daily by the lake steamers. At a place called Hütten, 1½ hr. above the village, is a frequented establishment for the goat's-whey cure, or *Molkenkur*.

Route E.

SCHWYZ TO RAPPERSCHWYL, BY EINSIEDLEN.

8½ hrs.' walk.

As remarked in the last Rte., those who wish to reach Einsiedlen in a carriage from Schwyz should follow the road there described as far as Biberbruck (12¾ m.), and then turn to the rt. by a road that mounts the valley of the Alpbach to Einsiedlen, distant 3½ m. A pedestrian approaching Einsiedlen from that side may save about 2 m. by following a rough path over the Katzenstrick leading due E from Altmatt to the monastery in 1 hr.

The most direct and agreeable way from Schwyz to Einsiedlen is by the Hacken Pass, a walk of 4½ hrs., or 4 hrs. when taken in the opposite direction. A rather steep track passing the hamlet of Oberdorf leads in about 2¼ hrs. from Schwyz to the summit of the *Hacken* (4,570′). The view is fine, but it is worth while to ascend an eminence N. of the pass called Hochstückli (5,105′), easily reached in 25 min., for the sake of the wider panorama which it commands. The descent on the N. side of the pass, where there is a rough Inn, is pretty rapid, until in 1 hr. the path reaches the village of *Alpthal*, on the l. bank of the Alpbach. About ¾ hr. lower down is an ancient Benedictine convent called In der Au, and ½ hr. further the celebrated monastery of

Einsiedlen, long one of the wealthiest, as it still continues to be the most frequented place of pilgrimage in central Europe. The pile of building forming the monastery, with the church in the centre, stands upon high ground about 3,000 ft. above the sea. It is said that the average annual number of pilgrims to this famous sanctuary approaches to or exceeds 150,000. The greatest concourse is on and about the 14th September, when it becomes difficult to obtain lodging. The church was plundered of its treasures by the French in 1798; it contains several pictures, statues, and bronzes, but none of much artistic value. The monastery now contains 60 Benedictine monks. The library contains 32,000 volumes, with some valuable specimens of early printing, and many MSS., one of which, a unique copy, is a description of Rome in the tenth century by a monk of the monastery. There is a museum of natural history, a printing press, a free school, and various other buildings appertaining to the institution.

The village immediately adjoining the monastery is chiefly composed of houses of entertainment for visitors of all classes; of these there are nearly 80, the two best being the Pfau and Einsiedlen Hof, the latter new.

A rough char-road, more interesting

than that by Schindellegi, leads nearly due N. from Einsiedlen to the L. of Zurich. At a distance of 1 hr. is the so-called Teufelsbrücke over the Sihl, where a house still standing is pointed out as the birthplace of Theophrastus Paracelsus. A steep road now mounts the ridge of the *Etzel*, to an Inn lying on the nearly level space forming the summit. This is 3,150 ft. above the sea, and commands a considerable view, which may be much improved by a détour to the point called *Schöneboden* (3,523′), ½ hr. E. of the Inn. The road down to the lake is steep and rough; several hamlets are passed; but *Pfäffikon* remains to the l. Crossing the high road that is carried along the W. shore, the traveller may at once reach the long bridge across the narrow and shallow part of the lake that conducts him in 4 hrs. from Einsiedlen to

Rapperschwyl (Inns: Schwar, good and reasonable; Poste, facing the lake, not recommended; H. du Lac, not clean; Freihof, in the town), a small town more fully noticed in § 27, Rte. A. The road over the Etzel is inconveniently steep and rough, and the passage of the bridge of Rapperschwyl (being unguarded even by a hand-rail) is trying to nervous persons, so that this route is better fitted for pedestrians than for those who require a vehicle.

[There is a circuitous way from Schwyz to Einsiedlen by a path leading E. from the town across a marshy plateau on the E. side of the Mythen to the head of one of the sources of the Sihl, called the Thalbach. The flysch deposit is here developed on a large scale. The highest village is *Iberg*, and a path leads thence to Einsiedlen chiefly by the l. bank of the Sihl.]

Route F.

STANZSTAD TO ALTDORF, BY ENGELBERG AND THE SURENEN PASS.

4½ hrs.' walk to Engelberg; 7½ hrs.' thence to Altdorf.

This is an easy and interesting expedition, practicable for ladies who can ride, as there is a carriage-road as far as Engelberg, and a safe bridle-track between that place and Altdorf: for practised mountaineers a guide is unnecessary in fine weather. The excursion is often made from Lucerne by those who intend returning thither by the lake steamer, or vice versâ. When the Surenen Pass is taken from Altdorf, which lies much lower than Engelberg, 8 hrs. exclusive of halts should be allowed between those places. The charge for a one-horse carriage from Stanzstad to Engelberg is 12 fr.; with two horses, 20 fr. The road is ill kept, and the fault is attributed to the monks of Engelberg, who are said to be the chief proprietors in the valley.

The *Engelberger Aa* is the copious torrent that drains the N. side of the Titlis range, and the S. side of the nearly equally lofty range extending from the Blackenstock to the Wallenstöcke. After flowing to the W. parallel to those ranges as far as Engelberg, it turns abruptly to the rt. and descends due N. about 1,850 ft. to the L. of Lucerne. Its detritus has probably been the chief cause of the formation of the alluvial plain (whereon stands the town of Stanz) that stretches from Stanzstad to Buochs along the S. side of the Bürgenstein.

The traveller arriving either by the lake steamer or by land may engage a vehicle for Engelberg at the Hotel zum Winkelried at Stanzstad, or may travel by omnibus the distance of two miles from that village to *Stanz* (Inns: Krone, good; Engel) (see § 25, Rte. B), where carriages are easily found. It is a good plan to take a light carriage (hire. 6 fr.) to Grafenort, 7½ m., and

walk the remainder of the way to Engelberg.

On leaving Stanz the road at once enters the valley of Engelberg which is open and tolerably level as far as

Wolfenschiessen, where the church porch contains paintings illustrating the life of the hermit Conrad Scheuber — son-in-law of Nicholas von der Flue—whose bones are here preserved. To the l. mounts the path to Isenthal described in Rte. G. The main valley gradually narrows and assumes a more alpine character, and the road mounts along the l. bank of the Aa, passing opposite to a pretty waterfall of the Fallenbach. At 3 m. from Wolfenschiessen, and 7½ m. from Stanz, it reaches

Grafenort, a hamlet with a chapel and a small Inn. Here the ascent becomes steeper, and the scenery grander. The torrent rushes through a deep ravine on the rt. and as the traveller advances the snowy summits of the Titlis and other neighbouring peaks come into view. Rough benches, partly roofed for shelter in bad weather, are placed at intervals by the road-side. After passing by a hamlet called Schwand, the road descends a little to *Erspan*, where the tracks leading from the Storegg and Juchli Passes (§ 25, Rte. C.) join the road which here turns eastward, and in 1 m. reaches

Engelberg (Inns: H. Titlis, good, reasonable; Sonnenberg, new; H. Müller, smaller, also good; H. Engelberg), a village beautifully situated at 3,343 ft. above the sea, at the N. base of the Titlis. Many persons resort to the Hotels here in summer, and remain *en pension* on very moderate terms. The paths from the Storegg and Juchli Passes, and that from the Engelberger Joch (§ 25, Rtes. C and D), meet here. The ascent of the Titlis may be made from hence, but far more conveniently from the inn on the Engstlen Alp on the S. side of the last-named pass. Among shorter excursions, that to the Ende der Welt at the head of the *Horbis Thal*, reached in 1½ hr. from the village, is especially recommended. It is a cirque, or amphitheatre, enclosed by snowy summits that average 9,000 ft. in height. The Rothstock Glacier descends into the head of the valley between the Engelberger Rothstock and the Weissberg (see next Rte.). Those who do not cross the Surenen Pass should walk or ride as far as the Tätschbach waterfall, ¾ hr. from Engelberg, and may well extend the excursion ½ hr. farther to the châlets of Herrenrüti (see below). With a good guide, a mountaineer may ascend the Uri Rothstock from this side, and descend to Isenthal (Rte. G).

The famous Abbey of Engelberg was founded in 1121 on a spot which, according to the legend, was pointed out by angelic voices; whence the name Mons Angelorum. The abbots were lords of the valley, and the monks are still the chief proprietors, carrying on a large business in cheese and cattle. The monastery has been three times destroyed by fire, and the present building dates from the last century. The library was despoiled of its chief treasures by the French, but still contains some curious early books, &c. The church contains some tolerably good paintings. There is a school or college taught by the monks, and a vast magazine for cheeses which deserves a visit.

The bridle-track leading to Altdorf mounts somewhat S. of E. from the village by the rt. bank of the torrent, and in ¾ hr passes below the fine cascade of the *Tätschbach*, which lies a short way to the l. and deserves a slight détour. In less than ½ hr. the track reaches the considerable châlets of *Herrenrüti* belonging to the monks of Engelberg, where travellers provided with fresh bread may breakfast on excellent butter, cheese, and milk. Here the Grassen Glacier is seen to SE., and on the rt. hand is left the track leading to the Grassen Pass (§ 25, Rte. E), lying between the Titlis and the Spannörter. [Two passes from Herrenrüti to the Valley of the Reuss

through the Erstfelderthal are now known. The easier, which may be called the *Erstfeldjoch* (8,635′?), between the *Schlossberg* (10,280′) and the double peak of the Spannörter, was traversed by Mr. Sowerby with A. Zgraggen, who with the same guide climbed the Gross Spannört in 1867. The *Spannorter Joch* (9,823′ F.W.T.), lying between the *Gross Spannort* (10,515′), and *Klein Spannort* (10,332′), was first achieved by Mr. Jacomb in 1864.] A short way above Herrenrüti, the traveller passes the boundary between the Cantons Unterwalden and Uri; the scenery continues to improve throughout the ascent of 1½ hr. to the châlets of the *Blacken Alp* (5,833′) Here the *Blackenstock* (9,685′) becomes the most prominent object in view. Although higher by 65 ft. than the Uri Rothstock, it is apparently less well placed for a panoramic view.

The track now crosses one branch of the Aar torrent, and mounts along the S. side of the Blackenstock to the *Surenen Pass*, also called Surenen Egg, 7,562 ft. above the sea, reached in 4 hrs. from Engelberg The top is a narrow ridge, tolerably steep on either side. The view of the Titlis, and that in the opposite direction, extending to the Glärnisch, are both remarkable, and will reward those who, without intending to descend to Altdorf, make the excursion from Engelberg to the pass. The descent on the E. side is much steeper than the ascent; there are usually some considerable patches of snow, and when this is soft and deep it adds considerably to the time required in ascending from Altdorf, and may make the passage difficult for mules. Below the snow-slopes the track descends in 1 hr. by zigzags amidst rocks and débris to the *Waldnacht Alp*. The torrent called Waldnachtbach precipitates itself a little lower down into a fearfully steep and narrow gorge called *Bockischlund*, along which the track is carried till after crossing a wooden bridge it descends across meadows to *Rübshausen*, a place interesting to geologists on account of the junction of the oolite limestone with the gneiss, reached in 2½ hrs. from the pass. Here a traveller bound for the St. Gothard may turn to the rt. to *Erstfelden* and reach Amsteg in 2 hrs. The way to Altdorf is by *Attinghausen*, the birthplace of Walter Fürst. His house is still pointed out, standing between the ruins of two feudal castles. Crossing the bridge over the Reuss, the traveller reaches *Altdorf* (Rte. A) in ½ hr. There is a rather shorter, but rougher and steeper path, practicable for pedestrians only from the Waldnacht Alp to Attinghausen. It is that indicated by a red line in the map annexed to *Berlepsch's Schweizer Führer*, but it is not recommended to travellers, as they gain little time, and lose the views of the remarkable gorge of the Bockischlund

In 1799 a division of the French army under Lecourbe crossed this pass from Stanz to attack the Austrians in the valley of the Reuss, but encountering the superior forces of Suwarof, they were forced to return by the same difficult route.

Route G.

STANZ TO ALTDORF BY ISENTHAL.

About 9½ hrs., exclusive of halts.

This is a very interesting way, and fit for a moderate walker. The Inn at Isenthal offers good head-quarters for excursions to the neighbouring peaks. The path from Wolfenschiessen to Isenthal being very little used, it is prudent to take a guide.

Quitting the road to Engelberg at *Wolfenschiessen*, 1½ hr. from Stanz, the traveller follows a track that mounts along the NE. side of a glen descending from SE. to join the valley of Engelberg. An ascent of 3½ hrs., passing on the way the hamlet of

Ober Rikenbach, leads to the *Schönegg Pass* (6,652′), a depression between the *Hoch Brisen* (7,895′) to the N. and the *Kaiserstuhl* (7,674′). On the E. side of the pass the track follows the longer and more important of the two glens that unite at the village of *Isenthal* (about 2,700′), commonly called Gross Isenthal, which is reached in 2 hrs. The chief inn (Adler) is clean and not bad, but the landlord has been accused of tricks and extortion; other travellers give more favourable reports. A second small inn is called Rebstock. Crispin Innfanger is recommended as guide. The most interesting excursion from Isenthal is the ascent of the *Uri Rothstock* (9,620′).

The easiest way is by the Gross Thal, the S. branch of which leads by the Hangbaum Alp to the Blümlisalp-firn, a field of névé lying W. of the summit, which is easily accessible from that side. The other and more difficult way lies through the *Klein Isenthal*. Mr. R. W. E. Forster has given an account of the ascent of the mountain by that way, with the descent to Engelberg, in the Second Series of 'Peaks, Passes, and Glaciers.' Above the highest châlets in the Klein Thal it is necessary to climb a steep slope of shaly limestone; this leads up to the extensive fields of névé that lie to the E. of the Uri Rothstock extending to the Blackenstock, Geishörnli, and the Gütsch. The snow is reached in about 3½ hrs. from Isenthal. It is necessary to make a wide circuit to the E., approaching near to the Geishörnli, and gradually bending to the rt. till the peak of the Rothstock is finally approached from the S. where it presents no difficulty, while the N. and E. side are impracticably steep. Starting at 2.10 A.M., Mr. Forster reached the summit at 8 A.M. The panorama is very fine but not equal to that from the Titlis. The great field of névé between the Uri Rothstock and the lower peak to the westward, called *Engelberger Rothstock* (3,251′), is called Blümlisfirn; it feeds the *Rothstock Glacier* (also called Griessen Gl.), which descends into the head of the Horbis Thal, and by that way Engelberg is reached in 5 hrs. from the summit. It may also be reached in 8 hrs. from Isenthal by the *Rothgrätli*, a pass lying W. of the Engelberger Rothstock. On the S. side the traveller keeps the Rothstock Gl. on his l. hand and descends to the Blacken Alp.

To reach Altdorf from Isenthal is a walk of 2½ hrs. The course is to descend to a small group of houses near the shore of the L. of Lucerne, called *Iselten*, and then to follow a narrow and rough path along the declivity of the *Schartiberg*, which leads to the village of *Seedorf*, close to the head of the lake and opposite Fluelen. A char-road leads thence to a bridge over the Reuss, and then to Altdorf (Rte. A), which is 2 m from Seedorf.

Route H.

STANZ TO ALTDORF, BY BECKENRIED AND THE SONNENBERG.

6 miles by carriage-road to Beckenried; 6½ hrs. walk thence to Altdorf.

There is a good and frequented road from Stanz to Beckenried. As the steamers that ply between Lucerne and Stanzstad do not communicate directly with those plying between the same city and Fluelen, many passengers approaching the lake by the road of the Brünig, and wishing to reach any of the ports of call between Lucerne and Fluelen, find it a better plan to go from Stanz to Beckenried rather than to Stanzstad. See § 25, Rte. B.

The road from Stanz crosses the Engelberger Aa, and reaches the shore of the lake at *Buochs* (Inns: Rössli; Schlüssel), a pretty village, rebuilt since 1798, when it was burnt to the ground by the French. Imme-

THE ALPS
from the Grimsel
TO THE BAY OF URI.

Edwd Weller.

London Longman & Co.

diately to the S. rises the *Buochserhorn* (5,936′), the summit of which may be gained in 3 to 3½ hrs. from hence or from Stanz. The view from the Stanzerhorn is said to be preferable. A delightful road along the lake-shore leads from Buochs to

Beckenried (Inns: Sonne; Mond; both good). The beautiful path from Beckenried to the Sonnenberg is passable for horses as well as foot-travellers, and may be recommended as one of the most charming in this picturesque region. At 1 hr. from Beckenried is *Emmatten*, whose houses are scattered amidst the park-like grassy slopes that overlook the lake. At Schönegg, a little below the village, is a comfortable and well-kept *pension*, commanding a beautiful view. The path beyond Emmatten winds round the N. base of the Nieder Bauen, or Seelisberger Kulm. Passing near the little lake or pool called Seelisberger See, the traveller in 2½ hrs. from Beckenried reaches the *Sonnenberg*, so called from an ancient chapel (Maria Sonnenberg). Here two large houses in a beautiful position receive travellers, either at hotel prices or *en pension*, and are deservedly reckoned among the most agreeable stopping-places in Switzerland. The accommodation and food are good, but in summer it is not easy to find room. The site is about 1,300 ft. above the lake, and immediately overlooks the Bay of Uri.

The Sonnenberg lies immediately above the village of *Seelisberg*, with a clean *pension* kept by Hauser. It is most commonly approached from *Treib*, a hamlet near the point of the promontory opposite Brunnen, and usually reached by boat from that place. The ascent from Treib to the Hotel is made in 1 hr. The charge for a horse is 6 fr. (too high), and the same for a chaise-à-porteur. Porters carrying luggage ask from 2 to 3 fr, according to the weight. Sonnenberg may be reached from the Grütli (Rte. A) in about ¾ hr. by a very steep path, not recommended to ladies. A very beautiful path overlooking the Bay of Uri leads from Sonnenberg in rather more than 1 hr. to *Bauen*, the solitary village on the W. shore of that branch of the lake. From thence to Altdorf, nearly 3 hrs.' walk, the way lies by Iselten and Seedorf, noticed in the last Rte.

ROUTE I.

ALTDORF TO STACHELBERG, BY THE KLAUSEN PASS.

	Hrs.' walking	Eng. miles
Unterschächen .	2¾	8
Klausen Pass .	2¾	6½
Stachelberg .	4½	10½
	10	25

This is rather a long walk for average tourists, especially if taken from Altdorf, when it involves an ascent of about 5,000 ft. The scenery is in places very interesting, and the way easily found in fine weather. Guides expect 10 fr., and the charge for a horse is 30 fr., besides a small *trinkgeld* to the boy who takes charge of it.

About 1 m. from Altdorf, at the opening of the *Schächenthal*, and on the l. bank of the Schächen torrent, is

Bürglen, the birthplace and home of William Tell. A neat country inn (zum Wilhelm Tell) stands on the supposed site of his house, and close at hand is a chapel erected in commemoration of the popular hero. About a mile beyond the village the path crosses to the rt. bank, and ascends gradually along the stream to *Spiringen* (nearly 5 m. from Altdorf), where there is a rough but tolerable country inn. Before reaching the village, the path to the Kinzig Kulm (Rte. L) turns off to the l. The stature and powerful frames of the men of this and the neighbouring valleys of Uri seem to show that, at least as to physical qualities, the race has not degenerated since the days of Tell and Fürst. Rather more than 3 m. above Spiringen is the highest village of the Schächenthal, called *Unter Shächen* (3,347′)

with a new, clean-looking inn. From a slight eminence crossed before reaching the village, there is a fine view of the head of the valley, and of the Clariden Alps, whose highest summits are the *Scheerhorn* (11,142′), and the *Claridenstock* (10,709′). Through the *Brunnithal*, opening close to the village, a copious torrent flows from the Grosse Windgelle, and the Gross Ruchi. Amsteg may be reached by the *Seweli Joch* (7,421′), and the Maderanerthal by the Krükeli (8,760′). See § 27, Rte. B.

For about 2 m. beyond the village the path keeps to the rt. bank, beginning to ascend more steeply through a pine forest. Near the Chapel of St. Anna a bergfall occurred in 1833 which barred the valley and formed a little lake; the traces have now almost disappeared. About 1 hr. 20 min. are required to ascend from Unter Schächen to the *Æsch Alp*, where there is a little châlet Inn. Near at hand to the rt. the pretty waterfall of the *Staübibach* is fed by a torrent descending from the Gries Glacier, lying on the N. side of the Scheerhorn. The path which had hitherto kept a direction rather S. of E. now turns NE. for a short distance, and the general direction is henceforward N. of E. It mounts by zigzags towards the barrier of rock called *Balmwand*, that seems to close the head of the valley. To the rt. is a gorge through which avalanches descend in the spring, and a little farther on a large cave. Hereabouts the botanist may find several rare plants, and amongst them *Delphinium montanum*.

The ascent of the Balmwand is free from difficulty, but ladies do well to descend on foot. There is a shorter and steeper path by the N. side of the Schächen torrent; it is but little used. At the summit the traveller attains to the gentle slopes that lead to the *Klausen Pass* (6,437′), reached in 1½ hr. from the Æsch Alp, or rather more than 6 hrs. from Altdorf. There is little to be seen from the path, as the summit forms a nearly level plateau; but a slight eminence N. of the little oratory that marks the actual summit commands a fine view of the Scheerhorn, Gross Ruchi, and other summits of the Clariden Alps. A rather rapid descent leads from the summit to the very extensive pastures and châlets of *Urnerboden*, which extend nearly at a level for a distance of 4 or 5 m. along the head of the valley of the Fätschbach. Near the chapel, at a spot called Spitelrüti, is a small inn, reached in rather more than 1 hr. from the pass. From hence the Scheer Joch, between the Kammlistock and Scheerhorn (§ 27, Rte. B), is reached in 5 hrs. The Urnerboden, as its name denotes, belongs to the Canton Uri, and the boundary of Glarus is where the steeper descent towards the Linth Thal marks the limit of the Alp. The path passes near a fine fall of the *Fätschbach*, often visited as an excursion from Stachelberg, and reaches the valley ½ hr. above the good hotel at *Stachelberg* in about 4 hrs. from the summit. The Linth Thal is described in § 27, Rte. A.

Route K.

SCHWYZ TO GLARUS, BY THE PRAGEL PASS — ASCENT OF THE GLÄRNISCH.

	Hrs.' walking	Eng. miles
Muotta	2¾	8½
Pragel Pass	3	8
Vorauen	2½	7
Glarus	2¾	8¼
	11	31½

There is a char-road from Schwyz to Muotta, and from Vorauen to Glarus; the remainder of the way is traversed by a somewhat frequented bridle-track. The scenery is in general much inferior to that of the Klausen Pass, described in the last Rte., but the views of the Glärnisch from the neighbourhood of the Klön See are finer than any on the rival pass. In fine weather a guide is not required, but a porter may be hired at Muotta or Vorauen.

The char-road from Schwyz to Muotta turns aside from the road between Schwyz and Brunnen at the hamlet of Ibach, about ¾ m from the former, and 2½ m. from the latter place. *Ibach* stands at the opening of the *Muottathal*, which here forms a defile, leaving no space for cultivation. The road ascends along the l. bank of the *Muotta* for about 1 m. to *Oberschönenbuch*. Here the traveller may ascend the Frohnalpstock (Rte. A), and find quarters for the night at the Inn on the Stossberg. About ½ m. farther is a bridge by which the road passes to the rt. bank of the Muotta. This spot in 1799 was the scene of desperate fighting between the Russians and the French. The former drove their opponents as far as Oberschönenbuch, but were unable to penetrate farther, and after two days of mortal struggle, during which hundreds of bodies were carried by the torrent down to the L. of Lucerne, Suwarof was forced to retreat. A brief notice of that extraordinary campaign will be found in § 30, Rte. A. There is a foot-path from Schwyz, rather shorter and more agreeable than the road, by which the pedestrian may reach this part of the valley by the rt. bank.

The scenery of the Muottathal is here very picturesque. The torrent forces its way amid rocks and fine trees, and receives tributary streams, several of which form pretty cascades. Beyond Ried the road again crosses the Muotta, and returns to the rt. bank before reaching

Muotta (Inn: Hirsch, clean and reasonable), the chief village of the valley, nearly 3,000 ft. above the sea. When the Inn is full, respectable travellers are received in a convent of Franciscan nuns on application to the Superior, or Frau Mutter. As the convent is poor, they should before departing give about the same amount as would be charged at the village Inn. Here the paths from Sissingen, and from the Kinzig Kulm (Rte. L), and that from Stachelberg by the Bisithal (Rte. M), join that from the Pragel. The passenger bound for Glarus follows the horse-track in a direction somewhat N. of E., and leaves on the rt. the head of the valley of the Muotta, which is called *Bisithal*.

The ascent is long and uninteresting, and the path stony, except in some spots where it is carried over marshy ground, where in wet weather the passage is difficult for horses and unpleasant for ladies. Nearly 3¼ hrs. must be allowed for the ascent, but 2½ hrs. suffice for the descent when the pass is taken in the opposite direction. Rather more than 1 m from Muotta the path crosses the stream descending from the pass, and then mounts along the l. bank till it reaches the gently-sloping boggy plateau that leads to the summit of the

Pragel Pass. Though only 5,062 ft. above the sea, snow often lies here in patches throughout the greater part of the summer. Rough planks and large stones afford an uneasy footing across the marshy tract that lies on either side of the summit, and the treeless stony slopes offer no object to interest the stranger. After descending gently for about 1 m. the scenery rapidly improves as the beautiful Klönthal opens out. The path becomes steeper, but offers better footing, and in little more than 1 hr., descending from the pass, the traveller reaches *Richisau*, a pretty hamlet, with a clean country inn, and about 1 hr. farther arrives at

Vorauen (Inns: bei Weber, good, attentive landlord; bei Ebele, clean; a large new hotel is well spoken of). This lies near the W. end of a beautiful little lake called *Klön See*, about 2 m. long, ¾ m. broad, 420 ft. deep, and 2,640 ft. above the sea, at the N. base of the Glärnisch, whose ice-capped crags are mirrored in its quiet waters. Voranen affords the pleasantest head-quarters for a mountaineer and a lover of nature in this neighbourhood, and a boat on the lake facilitates many short excursions. The most interesting expedition is the ascent of the *Glärnisch*. This great

mountain, perhaps the most remarkable in Switzerland of those not immediately connected with either of the main ranges of the Alps, forms the NE. extremity of the secondary range that divides the valley of the Linth and the Klausen Pass from the depression connecting Schwyz with Glarus by the Pragel Pass. What distinguishes the Glärnisch from other mountains of about the same height in the Alps is the considerable mass of glacier that caps the higher summits, and descends in several directions, especially to WSW., in definite ice-streams. This offers a marked contrast to its highest neighbour to the W.—the *Reiselstock* (9,200′) — which shows in summer merely scattered patches of snow that sometimes entirely disappear. The exceptional condition of the Glärnisch arises from the fact that the summit affords a resting-place for snow of considerable extent, and slightly above the limit where the summer heat suffices to melt the annual downfall. The main mass, forming an island of rock that rises very steeply on all sides, presents three peaks arranged in descending order from WSW. to NNE. —the *Hinter Glärnisch*, locally called Bächistock (9,584′), *Mittel Glärnisch*, or Ruche (9,557′), and a singular tower-like summit called *Vrenelisgärtli* (9,534′). Detached from the main mass is the promontory called Vorder Glärnisch (7,648′), immediately overlooking the town of Glarus. On the N. and NW. sides, facing the Klönthal, the above-named peaks, rising to a height of about 7,000 ft. above the lake, are so formidably steep that the ascent must be practically impossible. The two higher summits are, however, reached without much difficulty from Vorauen. Following the path to the Pragel for about 1½ m. a deep glen is seen to open towards the S. A rough path mounts the slopes, winding to the l. along the NE. side of the glen. About 4 hrs. from Vorauen suffices to reach the head of this glen, which is closed by the glacier descending WSW. from the highest plateau of the mountain. The rocks on the N. side of the glacier are tempting, but should be avoided, and it is necessary to cross to the opposite side below the end of the glacier and just above a waterfall. The ascent then lies straight up the glacier over ice and névé, till in 7 or 8 hrs. from Vorauen the ridge at the head of the glacier is reached, and the two summits of the Hinter and Mittel Glärnisch are seen separated by a deep gap. Either is accessible without much trouble, but the western and higher peak is usually selected. 14 hrs., exclusive of the halt at the top, should be allowed for the expedition.

The Vrenelisgärtli, which is lower by 53 ft. than the highest of the three summits, is far more difficult of access. It may probably be reached from the middle peak by traversing a trough-like depression (called the Furkeli) which separates them; but the experiment does not seem to have been made, and it would involve a very long day's work. The only successful attempts recorded have been from the S. side, where quarters for the night may be found at the Ober Guppen Alp, about 3 hrs. above Schwanden (§ 27, Rte. A). The ascent is not free from risk, as it involves a climb up and down a wall of limestone rock, where the projecting points to which the cragsman must cling are easily detached, threatening peril to the climber himself or to those who are below him.

The views from the Glärnisch are extremely fine, combining a distant alpine panorama with a very striking foreground, especially on the side of the Klönthal. The Swiss Alpine Club have decided to erect a hut on the plateau (about 7,800′) affording shelter for the night. The researches of M. Bachmann show that the mountain exhibits a nearly complete series of secondary deposits from the lias to the neocomian. Fossils abound at some points.

Opposite to the Glärnisch, on the NW. side of the Klönthal, is the much lower range of the *Wiggis*. The high-

est point at the NE. end, immediately over Nettstal, is the *Rautispitz* (7,494′). This may be taken in the way from Vorauen to Wesen, descending from the summit to Obersee, and thence to Näfels (§ 27, Rte. A). The view from the *Vorder Glärnisch* (7,648′) is, however, to be preferred. The top may be reached, with a guide, in 4 hrs.

There is a good road from Vorauen to Glarus, passing along the N. side of the Klön See. The pedestrian may avoid about 1½ m. of road by taking a boat along the lake. The valley descending from the lake towards the valley of the Linth is very picturesque, and enlivened by frequent cascades of the *Löntsch* torrent. At the manufacturing village of *Riedern*, on rising ground above the junction of the Löntsch with the Linth, one road leads to the rt. to Glarus, and another to the L to Nettstal, either place being about 1 m. distant. For an account of Glarus and the valley of the Linth, see § 27, Rte. A. The charge for a one-horse carriage from Glarus to Vorauen is 12 fr.

Route L.

MUOTTA TO ALTDORF.

There are two ways from Muotta, described in the last Rte., to Altdorf. The first, interesting rather for its historical recollections than for its natural attractions, traverses the Kinzig Kulm; the other and more beautiful way is by Sissingen, the only village on the E. shore of the Bay of Uri (Rte. A).

1. *By the Kinzig Kulm.* 7½ to 8 hrs. —About 15 min. E. of the village of Muotta is the junction of a lateral glen descending from the S. with the main stream of the Muotta which here issues from the Bisithal. A path mounts by the rt. bank of this glen. 'The ascent is continued obliquely up a steep broken slope, till the path arrives eventually upon the wooded edge of a chasm, in which the invisible stream, which issues from the high valley leading up to the pass, is heard descending in cataracts into the Muotta Thal. A track up the mountain side, on the rt. bank of this stream, is now pursued; and, after 1 hr.'s walking from Muotta, the abrupt ascent ceases, and the valley above is entered. Having passed through a wood, the path crosses the river for the first time by some châlets (1½ hr. from Muotta). The river is recrossed after another ¼ of an hr.; a second forest is traversed, and a third bridge crossed (2½ hrs. from Muotta). The part of the valley below this bridge is narrow and picturesque, shut in on both sides by high white precipices. The rich green slopes N. of Muotta, speckled with châlets, and surmounted by vast cliffs, may be seen from favourable positions, whenever the eye is thrown back, through the opening of the valley. After the third bridge is crossed, a wild open basin is found, out of which the track is seen ascending from the SW. corner. At this corner the river is again crossed. 1¼ hr. more are requisite before the summit of the pass is attained. As far as some châlets, about half-way up, the path may be traced without much difficulty, as it takes for its guide the falling stream, now reduced to a mere rill. Towards the summit, however, it is faintly marked, and liable to be confounded with other tracks. The stream is left behind, the direction of ascent being towards the south, among little hillocks and hollows filled with snow, over open ground, where many directions might be taken, and the proper route lost. A short pole marks the crest of the pass (6,791 ft.), which is gained in about 4 hrs. from Muotta.'

There is a fine view from an eminence about 10 min. E. of the col.

'The descent into the Schächen Thal is long and steep, but the path is well traced, and the pole on the *Kinzig Kulm*, being seen for a long time, would help to guide the ascending

pedestrian on this side, though it is useless for that purpose on the other. The path lies throughout down the pastures on the rt. bank of the stream, but generally at a considerable distance from it. The Schächen Thal is reached at a point a little below Spiringen, after a descent of 2½ hrs. From thence to Bürglen it is a walk of ¾ of an hr., and another ½ hr. brings the traveller to Altdorf.'—[M].

This pass is memorable for the passage of the Russian army under Suwarof in 1799, of which, as well as the other events of the same campaign, a brief notice will be found in § 30, Rte. A.

2. *By the Riemenstaldenthal.* About 7 hrs.

A streamlet descending from the SW. through a lateral glen close to the village of Muotta marks the line that is taken to a pass lying between a mountain called *Drei Engeln* (6,260′) and the *Kaiserstuhl* (8,258′). From the depression between these summits a glen descends to the shore of the Bay of Uri. The path passes the village of *Riemenstalden*, which gives its name to the narrow valley, and finally reaches the margin of the lake at *Sissingen* in about 5 hrs. from Muotta. The path from Sissingen to Altdorf along the steep slopes of the Axenberg was formerly rather difficult, and involved several ascents and descents. The new road along that side of the lake makes it an easy walk from Sissingen (also called Sisikon) to Altdorf or to Schwyz. Further information is desired as to this walk, which is doubtless interesting.

Route M.

MUOTTA TO STACHELBERG, BY THE BISITHAL.

This is a rather laborious walk of about 10 hrs., and should not be undertaken without a guide, who may, however, be taken from Eigen as well as from Muotta.

As mentioned in Rte. K, the upper part of the valley of Muotta is called *Bisithal.* The torrent formed by the confluence of several mountain streams flows through this upland glen, keeping a NW. direction till it enters the wider part of the valley, or Muottathal proper, just above the village of Muotta, and there joins the stream from the Pragel. The range of mountains dividing the track of the Pragel from that of the Klausen (Rte. I) extends from the Axenberg, overlooking the L. of Lucerne, to the *Scheyenstock*, close to Stachelberg. This range is crossed by the path of the Kinzig Kulm, described in the last Rte. There is no doubt that it might be traversed at many other points, but the most direct way from Muotta to Stachelberg lies by the N. side of the Scheyenstock, crossing the ridge that connects the last-mentioned range with that of the Glärnisch. A horse-track leads in 2½ hrs. from Muotta to *Eigen*, the only village of the Bisithal. Beyond that place the path is practicable only on foot, and towards the head of the valley it is so little marked that it is very difficult to keep the true direction without a guide. This observation especially applies to the summit of the pass, which is a rocky plateau of considerable extent and broken surface, where the drainage is carried off through crevices in the rock, instead of descending to the valleys on either side through channels having a definite direction. The scenery of the Bisithal is highly picturesque, and that of the upper plateau wild and impressive; and the pass, now rarely traversed, deserves to be more frequented. The plateau comes to an abrupt termination on the side of the Linththal, and the descent is long and steep, giving very fine views of the surrounding mountains.

Route N.

LACHEN TO SCHWYZ OR GLARUS, BY THE WÄGGI THAL.

Lachen to the Karrenegg Pass 6¼ hrs., thence to Schwyz 7 hrs., or to Glarus 4⅓ hrs.

The *Wäggi Thal* is a pastoral valley, rarely visited by strangers, which descends about due N. to the Lake of Zurich from the mountains lying N. of the Pragel Pass. By an easy pass at the head of the valley, it enables those who follow this Rte. from the L. of Zurich to reach Glarus or Muotta in a long day's walk.

At *Galgenen*, ½ hr. E. of Lachen on the road to Glarus (§ 27, Rte. A), a path turns to the l. and mounts a hill called Stalden, commanding fine views of the L. of Zurich, and in little more than 1 hr. from Lachen leads the traveller to the opening of the Wäggi Thal, where the torrent falls through a ravine in a succession of cascades. The path mounts gently through the valley till in 2½ hrs. from Lachen it reaches the village of *Vorder Wäggithal* (2,428′), lying at the E. foot of the *Gross Auberg* (5,584′). This mountain, which separates the Wäggi Thal from the valley of the Sihl, presents a very bold aspect, and the summit commands a fine view. A path over the ridge on the N. side of the Gr. Auberg leads in 3 hrs. to Ensiedlen (Rte. E). [The traveller bound for Glarus who does not care to pass through the Klönthal (Rte. K), may take a much more direct course from Vorder Wäggithal, by the Trebsen Alp to the pass, called *Schwändi Scheidegg* (4,695′), across the ridge which here forms the boundary between Schwyz and Glarus. Thence he descends by the hamlet of Niedersee to Näfels, on the high road from Wesen to Glarus, which is thus reached in about 8½ hrs. from Lachen.]

Two paths lead up the valley from Vorder Wäggithal. That called the summer track by the rt. bank of the stream is rather easier, but less interesting. The winter track keeps to the l. bank amidst huge blocks of stone, the remains of a bergfall from the Gross Auberg which, according to tradition, overwhelmed a village that once lay here. A pretty waterfall is passed on the l., and farther on is a cavern called Schuhmacherloch. After passing the defile that separates the two villages, the mountains on either side recede, giving a pleasing view of the head of the valley, and the path, in 1 hr. from Vorder Wäggithal, reaches

Hinter Wäggithal, the highest village in the valley. There is here a country inn, and the neighbourhood offers attractions to the botanist, and also to the geologist, who may find in the neighbourhood nummulitic and cretaceous fossils. The neighbouring mountains offer scope for many excursions. The *Radertenstock* (7,530′), which is the highest, is said to be somewhat difficult of access and to require a guide. The *Schienberg* (6,837′) is easier, but commands a less wide panorama.

If the weather be uncertain, or the clouds lie low, it is prudent to take a guide from Hinter Wäggithal. The ascent of the head of the valley is in places rather steep, but quite free from difficulty. After passing the Kleinalmend Alp and the Ober Alp, the summit of the *Karrenegg Pass* (5,151) is reached in 2¾ hrs. from Hinter Wäggithal. The summit commands a fine view of the Glärnisch. Descending on the S. side, the châlets of the Saas Alp are reached in ¼ hr. The traveller bound for Glarus descends thence in 1¾ hr. by Richisau to Vorauen (Rte. K). If his object be to reach Muotta and Schwyz, it is necessary to bear to the rt. keeping nearly at a level, until in 1¼ hr. the summit of the Pragel is attained (see Rte. K).

[An interesting but circuitous way from Hinter Wäggithal to Vorauen lies by the pass called *Bockmätteli*, descending to Ober See in the Canton Glarus, and thence crossing the Wiggis range by a path referred to in Rte. K.]

SECTION 27.

THE TÖDI DISTRICT.

In several preceding portions of this work the attention of the reader has been directed to the significance of that main line of valley which traverses Switzerland from Martigny to Coire, and marks the division between the Pennine and Lepontine Alps on the one hand, and the central chain of Switzerland on the other. The latter extends with great regularity from WSW. to ENE. parallel to the main valley with but a single break, where it is completely cut through by the defile of Schöllinen, giving a passage to the Reuss between Andermatt and Amsteg. Although this line of disruption has much geographical importance, it has no corresponding geological significance. It serves to fix the limit between the Bernese Alps, described in Chap. VII., and the eastern prolongation of the same range, which may conveniently be described as the Tödi Chain from the name of its highest summit. It is this chain, with its northern outlyers extending to the Lake of Wallenstadt, that is included in the present section under the name Tödi district. Its limits, from Andermatt to Sargans, are fixed by the Oberalp Pass and the valley of the Vorder Rhein—by the deep valley, in great part filled by the Lake of Wallenstadt, extending from Sargans to Wesen—by the Linth Thal and the Klausen Pass, connecting Stachelberg with Altdorf—and, finally, by the valley of the Reuss, between Altdorf and Andermatt.

The *Tödi Chain* is naturally divided into six minor groups, separated from each other by passes, the lowest of which exceeds 7,500 ft.

1. The westernmost of these is the *Crispalt*, a rugged range including many peaks of nearly equal height. The highest of these are the *Piz Giuf* (10,164′) and *Piz Nér* (10,036′). On the Swiss Federal Map the name Crispalt is given to a southern, but secondary, peak of Piz Giuf, measuring 10,099 ft. W. of the main group is the Rienzerstock (9,777′), while a northern outlyer culminates in the Bristenstock (10,089′).

2. E. of the Crispalt, the Kreuzli or Hrixli Pass (7,710′) separates this from the rather higher mass of the *Oberalpstock*, whose highest summit is the *Piz Cotschen*, or *Tgietschen* (10,925′).

Here occurs a partial break in the continuity of the chain. The crest of the snowy range connecting the Oberalpstock with the Tödi nowhere sinks to 9,000 feet, but makes a sweep convex to the N., forming a semicircular recess, whose numerous glacier torrents are all poured into the Rhine through the Val Russein below Dissentis. Two glacier passes lead over this part of the chain—one to W., over the Brunnigletscher to the Maderaner Thal; the other to the NE., over the Sand Glacier, to the Linth Thal.

3. The *Tödi*, the monarch of this region (11,887′), is attended by numerous secondary peaks that arise from the extensive snow-fields surrounding the central mountain. A very considerable outlyer, whose chief summits are the Scheerhorn (11,142′) and Windgelle (10,463′), belonging to the Cantons Uri and Glarus, is connected with the Tödi by the range of the Clariden Grat. A less important branch encloses the Biferten Glacier, and terminates in the Selbsanft, S. of Stachelberg. Towards the valley of the Vorderrhein a high promontory stretches nearly due S. from the central peaks of the Tödi, and is crowned by the lofty summit of the *Stockgron*, or *Piz Russein* of Dufour's Map (11,211′). Another considerable ramification of the same mass terminates farther to the E. in the remarkable peak of the *Brigelser Horn*, or *Piz Tumbif* (10,663′).

4. The Kisten Pass (8,281′) separates the Tödi group from the *Hausstock*, whose summit attains 10,355 feet;

a branch of this latter group forms the range of the Freiberge in Glarus.

5. The Hausstock is cut off from the rather lower but more extended mass of the *Vorab* by the Panixer Pass (7,907′). Numerous summits, of which the *Vorab* proper, *Ofen*, *Zwölfihorn*, and *Piz Grüsch* are the most important, approach very near, but do not quite attain to 10,000 feet.

6. The eastern limit of the latter group is marked by the Segnes Pass (8,616′)—the most frequented of those connecting the Canton Glarus with the Vorderrhein—beyond which arises a wide-stretching mass of rock and glacier, to which Theobald has given the collective name *Sardonagebirg*.

This mass is cleft by a deep valley —the Kalfeuserthal: one branch, culminating in the *Scheibe* (9,587′), extends ENE. to the *Schlössli Kopf* (7,313′) over Pfäfers, while another, including the fine peak of the *Ringelspitz* (10,660′), runs due E. to the low Kunkels Pass, separating this range from the *Calanda*. The latter remarkable mountain must, owing to the similarity of its geological structure, be considered an outlyer from the Tödi chain, though the direction of the ridge seems to show the action of the same forces that have operated in the Adula group (§ 31) on the S. side of the Vorderrhein.

Besides the three outlying masses already mentioned on the N. side of the chain—the Bristenstock connected with the Crispalt, the Clariden Alps with the Tödi, and the Freiberge with the Hausstock—a more extensive though less lofty mountain district extends N. and NW. from the Scheibe to the neighbourhood of the L. of Wallenstadt. The irregularity of the disposition of the valleys and ridges in this tract seems to show that they owe their present form to denudation and erosion acting on the calcareous strata of which they are mainly composed, rather than to more general mechanical causes acting in definite directions.

The N. side of the Tödi chain, with Stachelberg as head-quarters, is now frequented by mountaineers. Elm in the Sernfthal (Rte. K) is also a convenient stopping-place. On the S. side of the chain, Ilanz (2,356′) and Dissentis (3,773′) afford good quarters. Brigels (Rte. G) is an interesting spot, but the accommodation is inferior. A tolerable Inn at the head of the Kalfeuserthal is still a desideratum.

Much valuable information respecting the Tödi chain may be found in a small volume by the late Pr. Theobald of Coire, entitled *Das Bündner Oberland*, Chur, Hitz, 1861. The same active mountaineer and geologist has published a panorama taken from the Piz Mundaun, near Ilanz. The reader may also consult various papers by Prof. Ulrich, and the Jahrbuch of the Swiss Alpine Club. The whole district is included in sheet 14 of the Swiss Federal Map, which is indispensable to the mountaineer who would explore this portion of the Alps. The map given in this volume has no pretension to accuracy of detail.

Route A.

ZURICH TO STACHELBERG, BY GLARUS. ASCENT OF THE TÖDI.

	Eng. miles
Rapperschwyl (by steamer) .	19⅜
Wesen (by road or rly.) . .	16¼
Glarus (by road or rly.) . .	8
Stachelberg (by road) . .	10½
	54¾

The traveller going from Zurich to Glarus has a choice between various modes of conveyance, but most persons prefer to avail themselves of the steamer on the lake as far as Rapperschwyl. Those who prefer to make the entire journey by rly. join the line leading from Winterthur to Wesen (described in Rte. C) at Wallisellen,

about 5¼ m. from Zurich; by that way the distance is 8 m. more than by water, but by time considerably less.

There are good roads along both shores of the lake, but the scenery is not so interesting as to induce many travellers to select them in preference to the steamer. A brief notice is here given of the chief places on either shore of the lake seen by a passenger from the steamer. The form of the lake is that of a bow concave to the NE. We shall call the shore which remains on the l. of a passenger going from Zurich the N. shore, and that on the rt. hand the S. shore.

On leaving Zurich the traveller is struck by the large number of villas seen near the lake on either side, not as on other Swiss lakes inhabited by strangers, but nearly all belonging to townspeople, and giving evidence of the prosperity of the city.

On a height above the S. shore is *Thalwyl*, whose church commands a distant view. This is the nearest point to the *Hochwacht*, the summit of the Albis hills. See § 26, Rte. B, where *Horgen*, the starting-point of the carriages plying to Zug, is also noticed. On the N. shore opposite Horgen is

Meilen (Inns: Löwe; Sonne), a large village with a Gothic church of the 15th century, near the base of the *Pfannenstiel* (2,418′), a hill commanding one of the finest views over the lake. This place has become famous for the discovery of extensive remains of lacustrine habitations belonging to a race far anterior in date to the oldest historical records. These remains were first brought to light at the neighbouring hamlet of Obermeilen during the winter of 1853—1854, when the waters of the lake were lower than they had been seen at any time within human memory. They were first described by Dr. F. Keller, of Zurich. Very interesting details will be found in M. Troyon's work, 'Habitations lacustres des Temps anciens et modernes,' and in a more abridged form in Sir Charles Lyell's 'Antiquity of Man.'

On the S. shore is the peninsula of *Au*, whose form is not easily reconciled with some recent theories as to the excavation of the alpine lake-basins by glaciers. A little farther from Zurich, on the same side of the lake, is

Wädenschwyl (Inns: Seehof; Engel; Hirsch), a busy town, one of the centres of silk-weaving, which is extensively carried on in the Canton Zurich. A short excursion may be made to the ruined castle on an adjoining height, and to a neighbouring eminence called *Burghalden*, commanding a fine view. On the N. shore, nearly opposite, is

Stäfa (Inns: Rössli; Sonne), a large and thriving village, where a stranger, wishing to see something of modern Swiss life and manners, may well halt for a day or two. There are many pretty walks in the neighbourhood. Goethe twice resided here for some time.

Richterschwyl (Inn: Engel, where visitors often remain *en pension*) is the starting-point for carriages plying to Schwyz and to Einsiedeln (§ 26, Rtes. D and E). So far both shores of the lake belong to the Canton Zurich; henceforward the S. shore belongs to Schwyz, and the opposite side to St. Gall. About 2 m. E. of Richterschwyl the steamer passes near two small islands, the larger of which, called *Ufenau*, afforded a retreat to Ulrich von Hütten, who died there in 1523. The island belongs to the monks of Einsiedeln, and contains a small church said to date from the 10th century.

Here a stranger may easily suppose that he has reached the end of the lake. A tongue of land advances from the S. shore more than half-way across it, and is united to the opposite bank by a bridge, just 1 m. in length, supported on rather slender oak piles. The lake extends, however, fully 6 m. E. of this imperfect barrier, but does not attain nearly so great a depth. The consequence is, that the E. end is not rarely frozen over in winter, whereas that very seldom occurs throughout the remaining portion of its surface.

Rapperschwyl (Inns: Schwan, good and reasonable; Poste, facing the lake, not recommended; H. du Lac, not clean; Freihof, in the town; with several others), lying at the N. end of the bridge, is the principal station (after Zurich) for the lake steamers, and the point at which the rly. from Zurich and from Winterthur reaches the shore. It is a very curious old town, which, with a small adjoining district, maintained a separate existence as an independent republic until the French entered Switzerland in 1798. The ancient Rathhaus is worth a visit, containing much ancient wood-carving and other relics of a past age. The old Grafenburg, or castle of the Counts of Rapperschwyl, stands in a very picturesque position on the hill above the town. Near at hand is an Inn—zum Schützenhaus—where visitors resort for refreshment. The bridge (§ 26, Rte. E) dates from 1350, but was reconstructed during the present century.

When the depth of water permits, the steamer passes the bridge of Rapperschwyl, and crosses to the N. shore, where are seen the two towers of the church of *Lachen* (Inn: Bär), whence a pedestrian may reach Glarus through the Wäggi Thal (§ 26, Rte. N). [Those who prefer the road to the railway may land at Lachen (5 steamers daily from Zurich) and go on by country road to Glarus, a distance of 18½ m. After passing *Reichenburg* the road quits the Canton Schwyz, and enters that of Glarus. Traversing in succession Nieder and Ober Urnen, this road reaches Näfels on the main road from Wesen to Glarus (see below).]

The E. end of the lake of Zurich is reached at *Schmerikon* (Inns: Rössli; Adler), a station on the rly. leading to Glarus or to Coire. The rly. thence to Wesen is described in Rte. C. The tract of country separating the lakes of Zurich and Wallenstadt is in great part an alluvial plain produced by the detritus carried down by the Linth. The difference between the level of the lakes is but 52 ft., and there is little room to doubt that they once formed a continuous sheet of water. The mass of mineral matter carried down by the Linth first filled up the narrow part of the ancient lake basin near Wesen, and then gradually extended to the westward and formed the low tract extending between the bases of the hills from Uznach to Reichenburg. The valley of the Linth, forming with its tributaries the Canton Glarus, opens to the S. opposite Wesen at the W. end of the L of Wal enstadt. The inundations of the Linth, and the masses of débris brought down from the high mountains that enclose it, were a source of constant danger, damage, and disease to the inhabitants of Wesen, and the low country stretching from thence to the westward. The Linth constantly changed its direction, and threw gravel and débris across the course of the stream that drained the L. of Wallenstadt. About the beginning of this century Conrad Escher, of Zurich, devised a plan for restraining the mischief, and restoring to cultivation a vast tract that had been rendered barren and unhealthy. Instead of being left to find its way to the Lake of Zurich through the valley between Wesen and Schmerikon, the Linth was made to flow through an artificial channel, since called Escher Canal, into the L. of Wallenstadt, and to deposit its burden of detritus in the depths of the lake; while the Linth Canal, cut through the alluvial plain to the W., leads the drainage of the lake (including the waters of the Linth) from Wesen to the L. of Zurich, and serves at the same time to drain the country on either bank. Few public works have been more successful, and his fellow-citizens justly conferred on its author and his descendants the honorary title 'von der Linth.' In the course of ages the W. end of the L. of Wallenstadt will be filled up by the detritus of the Linth, and some future engineer will have to devise a new

plan for disposing of the materials which it is incessantly bearing down from the mountain tops to the plain.

Wesen, standing at the junction of the railway to Sargans and Coire with the branch to Glarus, and close to the Linth Canal, is described in Rte. C. There are six trains daily to Glarus, employing half an hour to travel 7½ m. The distance by road is 8 m.

On leaving the Wesen Station, the rly. traverses a long lattice bridge thrown over the Linth Canal. To the rt. is seen the village of Nieder Urnen on the road from Lachen to Näfels (see above), backed by the *Hirzli* (5,387′), sometimes mounted for the sake of the fine view over the Lakes of Zurich and Wallenstadt. About 3 m. from Wesen is *Näfels* (Inns: Hirsch; Schwert), a large village with a fine church and Capuchin convent, memorable for the extraordinary victory achieved in 1388 by a handful of Swiss mountaineers over 6,000 (some accounts say 12,000) Austrian troops. Having been forced to retire before the superior numbers of the enemy, and to yield possession of Näfels, 500 men of Glarus took up a position on the slopes W. of the village. With the help of blocks of stone rolled down from above, they withstood the enemy and made some disorder in his ranks, when the timely arrival of 30 confederates from Schwyz spread the belief that further reinforcements were at hand. With desperate valour, the Swiss charged the dense masses of their opponents, threw them into utter confusion, and drove them back to Wesen with the loss of 2,500 men. Eleven upright stones mark the site of the fiercest struggle, and a festival held on the first Thursday of April annually recalls to the memory of posterity the deeds of their ancestors. On the opposite side of the valley, close to the Escher Canal, through which the Linth is led to the L. of Wallenstadt, is *Mollis*, a large manufacturing village, in whose church rest the bones of the Swiss heroes who fell at Näfels.

[A short ascent to the W. leads from Näfels to two small lakes called *Nieder See* (reached in 1 hr.), and *Ober See* (2 hrs. from Näfels), by which lies a very picturesque walk to Vorauen across the range of the Wiggis (§ 26, Rte. K), or else to the Wäggi Thal (§ 26, Rte. N). The two lakes well deserve a visit from persons remaining at Glarus or Wesen.]

Netstall is a large manufacturing village close to the opening of the Klönthal, and lying at the E. base of the Wiggis range. It is exposed to avalanches from the adjoining heights.

The scenery of the Linth Thal is throughout so fine, that the traveller who traverses it in the railway or a covered carriage suffers a great loss; but this remark holds especially as to the approach to Glarus, backed by the noble mass of the Glärnisch, while a little to the l., in the background, is seen the range of the Freiberge culminating in the Kärpfstock (9,180′).

Glarus (Inns: Glärner Hof, new, good, and reasonable; Rabe, also new; Schweizerhof; and several other new houses) is the chief town of the Canton, 1,490 ft. above the sea, no longer to be recognised, since it was almost totally destroyed by fire on May 10, 1861. The large subscriptions raised in Switzerland, aided by contributions from England and other countries, and the industry and energy of the inhabitants, have already replaced their ancient homes by more solid and stately buildings, in which, however, there is little to interest a stranger. The town and territory forming the present canton were long subject to the convent of Säckingen, founded by an Irish Saint, named Fridolin, who first preached the gospel in this region. After successfully resisting in arms the forces of Austria, the people purchased their emancipation from the seignorial rights of the abbesses of Säckingen. After intestine struggles between the Catholics and Protestants, peace was established; and this is one of the few districts in

ALPS OF GLARUS
and part of the
NEIGHBOURING CANTONS
English Miles
1 2 3 4 5
Edwd Weller
London. Longman & Co.
GLARUS
SCHWYZ
ALTDORF
Rautispitz
Frohnalpst
Schild
Flimser Alp
Flimser Thal
Spitzmeilen
Seez Bach
Weissenberg
Weisstannen
Grüne Hörner
M. Luna
Vättis
Sardona
Calfeuserthal
Trinserhorn
Ringelspitz
Piz Larmora
Kunkels
Foppa
Trins
Flims
Reichenau
Hinter Rhein
Vorder Rhein
Lugnetz Thal
Panix
Brigels
Ruvis
Luz
Trons
Somvix
Dissentis
Bristenstock
Oberalp Stock
Brunni Gl.
Kerstenbach
Maderaner Thal
Amsteg
Reuss
Gr. Windgellen
Gr. Ruchi
Düssistock
Kleiner Todi
Piz Rosein
Piz Tumbif
Kavrein
Tödi
Scheerhorn
Schächen Thal
Unterschächen
Bürglen
Kinzig Kulm
Klönthal
Vorauen
Pragel
Muotta Thal
Muotta
Glärnisch
Ob. Legi See
Schwanden
Mühle Thal
Frauenthal
Gulden Stock
Elattenb.
Riseten Pass
Matt
Sees Alp
Mürtschenstock
Mürtschen Firn
Mittaghorn
Vorab
Silberspitz
Flimser Stein
Bargeias
Hausstock
Mutten See
Panixer Pass
Jätzli
Limmern Kessigrat
Selbsanft
Sandalp
Gemsistock
Scheyen Berg
Kammerstock
Fätschbach
Urner-boden
Pisten-bruche
Klausen Pass
Balmwand
Staubi
Bäret Thal
Clariden Grat
Geisputzi
Gries Gl.
Bäretenstock
Catscharauls
Hüfi Gl.
Braunwald
Ober Sandalp
Becla-stock
Stachelberg
Linth
Linth Thal
Braunberg
Schilten
Eigen
Glatt Alp
Saasberg
Karpf Stock
Durna Thal
Tödi
Hausstock
Ranin Pass
Etzli
Scheibe
St. Martin
Wichlen
Muttaghorn
Obersee
Lintz
Weesen
Amden
Wallenstadt
Ragaz
Mayenfeld
Chur
Reichenau
Ilanz
Disentis
Oberalp Pass
Lukmanier Pass
Splügen
Bernardin
Hinterrhein
Vorderrhein
Rheinwald
Safien Thal
Calfeuser Thal
Flimser Thal
Seez Thal
Linth Thal
Muotta Thal
Schächen Thal
Klönthal
Glärnisch
Tödi
Scheerhorn
Düssistock
Bristenstock
Oberalp Stock
Brunni Gl.
Kerstenbach
Maderaner Thal
Amsteg
Reuss
Gr. Windgellen
Gr. Ruchi
Kleiner Todi
Piz Rosein
Piz Tumbif
Kavrein
Trons
Somvix
Dissentis
Lugnetz Thal
Panix
Brigels
Ruvis
Ilanz
Flims
Trins
Reichenau
Hinter Rhein
Vorder Rhein
Foppa
Kunkels
Piz Larmora
Ringelspitz
Trinserhorn
Sardona
Calfeuserthal
Vättis
M. Luna
Grüne Hörner
Weisstannen
Seez Alp
Riseten Pass
Matt
Gulden Stock
Elattenb.
Schwanden
Ob. Legi See
Mühle Thal
Frauenthal
Flimser Thal
Flimser Alp
Schild
Frohnalpst
Rautispitz
Seez Bach
Weissenberg
Spitzmeilen
Flimser Stein
Bargeias
Mürtschen Firn
Mürtschenstock
Mittaghorn
Vorab
Silberspitz
Hausstock
Mutten See
Panixer Pass
Jätzli
Limmern Kessigrat
Selbsanft
Sandalp
Gemsistock
Becla-stock
Ober Sandalp
Scheyen Berg
Kammerstock
Fätschbach
Urner-boden
Pisten-bruche
Klausen Pass
Balmwand
Staubi
Bäret Thal
Clariden Grat
Geisputzi
Gries Gl.
Bäretenstock
Catscharauls
Hüfi Gl.
Braunwald
Braunberg
Schilten
Eigen
Glatt Alp
Saasberg
Karpf Stock
Durna Thal
Linth Thal
Linth
Stachelberg
Etzli
Ranin Pass
Scheibe
St. Martin
Wichlen
Muttaghorn
Obersee
Lintz
Weesen
Amden
Wallenstadt
Ragaz
Mayenfeld
Chur
Oberalp Pass
Lukmanier Pass
Splügen
Bernardin
Hinterrhein
Vorderrhein
Rheinwald
Safien Thal
Calfeuser Thal
Flimser Thal
Seez Thal
Linth Thal
Muotta Thal
Schächen Thal
Klönthal
Glärnisch

Switzerland where by mutual agreement the same church serves alternately for the public worship of the rival creeds. The people are industrious and given to manufacturing pursuits, but distinguished even in Switzerland by their love of gain. In the neighbourhood of Stachelberg tourists are sometimes called upon to pay toll for using a path that is claimed by the peasant landholder as private property, and the guides and herdsmen with whom a mountaineer comes into contact display a grasping spirit that is not agreeable. Few districts in Switzerland can display finer scenery, or offer more agreeable quarters to a mountaineer, than Vorauen, Stachelberg, and Elm.

Glarus may serve as a starting-point for several interesting excursions. The easiest and the most interesting of these is that to Vorauen (§ 26, Rte. K), easily reached by a good carriage-road. The *Vorder Glärnisch* (7,648′) may be ascended from the town by a rather circuitous course, winding round the N. and W. sides of the mountain. The *Rautispitz* (7,494′) over *Netstall* is more easily attained from the N. and W. sides than from Glarus.

On the opposite side of the main valley the nearest summit is that of the *Schilt* (7,503′), but the *Frohnalpstock* (6,982′)—not to be confounded with the mountain of the same name near Brunnen on the L. of Lucerne (§ 26, Rte. A)—is said to offer a finer view. It may be climbed in 4½ hrs. either from Glarus or from Mollis.

[More interesting than either of the last-mentioned are the mountain paths from Glarus to the L. of Wallenstadt, for which a guide should be taken. Ascending to the Mürtschen Alp, the traveller may descend by the E. side of the *Mürtschenstock* to Obstalden or Mühlehorn on the lake shore. One of the peaks of the last-named mountain may be ascended on the way, but it is doubtful whether the highest summit, 8,012 ft. in height, has been attained. By bearing to the rt. before reaching the Mürtschen Alp, the traveller may pass the ridge to the E., and descend upon a group of small lakes lying at the head of the Murgthal, through which he may descend to Murg (Rte. C) on the Lake of Wallenstadt. A third way to the lake, easier than either of those above pointed out, is by the Platten Alp, on the W. side of the Mürtschenstock, descending to Obstalden by *Kreuzerberg*. These passes all command very beautiful views.

An omnibus runs twice a day between Glarus and Stachelberg or Linththal. A one-horse carriage costs 12 fr. — with two horses, 17 fr.

The pedestrian, ascending the Linth Thal from Glarus, may take a very agreeable path to Mitlödi by the Oescherieter. With a little sacrifice of time, he gains very picturesque views of the valley and the neighbouring mountains.

Following the carriage-road, the traveller on leaving the town passes on the l. a bridge leading to the large and thriving village of *Ennenda*, on the opposite side of the valley. A very gentle ascent leads to *Mitlödi* (Inn: Rössli), immediately at the E. base of the Glärnisch. The ascent of the third and most difficult peak, called Vrenelis Gärtli (§ 26, Rte. K), is best made from hence. At the junction of the Sernfthal (Rte. K) with the main valley, only 1.700 ft. above the sea, is *Schwanden* (Inn: Adler, plain but good country Inn), about 4 m. from Glarus, and 1½ m. from Mitlödi. Here the ascent of the main valley, which had hitherto lain due S., bends somewhat to W. Keeping to the road on the l. bank which has been followed since the traveller left Glarus, he passes a pretty waterfall of the Leukelbach fed by the glaciers of the Glärnisch, and in 3 m. from Schwanden reaches *Luchsingen* (Inn: Freihof), at the opening of a wild ravine issuing due E. from the S. base of the Glärnisch. In the background is seen the *Reiselstock* (9,200′), the nearest rival of the Glärnisch. The higher of

its two peaks is said to be inaccessible (?).

At Luchsingen the road crosses a bridge over the Linth to *Hätzingen*, a thriving village on the rt. bank, and just beyond it leaves to the l. a fine waterfall of the Diesbach. After traversing several hamlets the traveller reaches Rüti, about 9 m. from Glarus, where, if on foot, he may cross the river, and reach Stachelberg by a shorter and more agreeable way than the road.

On the rt. bank of the Linth, 1½m. beyond Rüti, is the village of *Linththal* (Inns : Bär ; Rabe). For a mountaineer either of the above very fair country Inns offers some advantages over the larger and handsomer establishment at Stachelberg, which is apt to be overcrowded, and where a pedestrian arriving with knapsack and alpenstock does not always receive much attention. A few hundred yards lower down the valley, and on the opposite or W. bank of the river, is *Stachelberg*, a large establishment primarily intended for patients who use the mineral waters, but which, owing to the beauty of its position and its good accommodation, has become a frequented resort of tourists in this part of Switzerland. The establishment consists of two large buildings connected by a covered gallery The mineral spring, which rises in a cleft nearly 1,000 ft. above the Baths, is strongly impregnated with sulphur and alkaline salts, and is considered efficacious in some cases of rheumatism and diseases of the bones and skin. The supply is so small that but a limited number of baths can be supplied daily. The number of visitors is often more than sufficient to fill the establishment, and in that case passing travellers are sent to a *succursale* of the hotel on the opposite bank of the river, or may resort to the rustic, but not bad, Inns at the adjoining village of Linththal. As a hotel the house at Stachelberg is seen to better advantage in autumn when the bathing visitors have departed. On Sundays pleasure-parties resort hither from Glarus, and make the house rather noisy. The charges are reasonable, especially for those who remain some time and make an agreement with the landlord.

The position of Stachelberg is extremely picturesque, and at the same time convenient for mountain excursions ; but it is rather a drawback that, as compared with similar places in the Alps, this lies low, only 2,178 ft. above the sea. The Baths stand at the E. foot of the *Braunwaldberg*, which is a portion of the mass of the Scheyenstock. Immediately opposite, on the E. side of the Linth Thal, is the opening of the Durnachthal, through which lies the path to Elm by the Richetli Pass (Rte. M). The grandest objects in view are, however, the peaks that enclose the head of the Linth Thal. To the left rises the Selbsanft, a colossal tower of rock capped with glacier, and in the background the still higher peaks of the Bifertenstock, Piz Frisal, and Tödi.

Of the many excursions that may be made from Stachelberg or Linththal, the most interesting are those lying towards the head of the valley. The fall of the Schreyenbach, the Pantenbrücke, the Unter Sand Alp, the fall of the Oberstaffelbach, the Ober Sand Alp, and the Biferten Grätli, are successive stages in the way taken on the ascent of the Tödi described below, and each of them offers sufficient inducements to the traveller to make it the object of an excursion from the Baths. Of other points deserving a visit, the following may be specified :

The Fall of the *Fätschbach*, reached in ½ hr. by the path leading to the Klausen Pass (§ 26, Rte. I).

The *Sassberg* (6,555′) rising on the N. side of the Durnachthal in the angle between it and the Linth Thal. A fine view is gained from a point that may be reached on horseback ; but the summit, which gives a panorama of the Freiberge and most of the Glarus ranges, is attainable only on foot.

The finest walk in the neighbour-

hood consists in taking the shorter path to the Kistengrat (Rte. G), by the *Tritt Alp*, till it meets the ordinary route by the Pantenbrücke, and then returning home that way. It takes about 5 hrs. and requires a steady head, as there is one not very easy bit of rock ascent.'—[J. R. K.]

Professor Ulrich has given an account of an excursion from Stachelberg, in which he made the ascent of the *Kammerstock* (6,975′) and the *Gemschfayrstock* (9,734′). The first is perfectly easy of access; the second comparatively difficult, but with a competent guide the ascent may be accomplished in one long day from Stachelberg.

Crossing the Fätschbach by the lower fall, a path mounts steeply through the forest, and leads in 3 hrs. from the Baths to the highest châlet of the Kammer Alp. Another hour suffices to reach the top of the Kammerstock, which is the extreme E. summit of the range of the Clariden Alps (see next Rte.) It is a ridge with three summits, of which that overlooking the Linth Thal is the lowest.

The view, of which a drawing was made by Mr. G. Studer that is preserved in a frame at the Baths of Stachelberg, appears to be remarkably extensive for a point of such moderate height. It overlooks on the S. side a wild upland valley partly filled with huge blocks fallen from the mountains on either side. The upper end, belonging to the Canton Uri, is the Fisiten Alp; the lower portion, partly divided from the Fisiten Alp by a fence that marks the division of the two cantons, is the Bärenboden Alp. The stream that traverses the Bärenboden forms the fine fall of the Schreyenbach, admired by travellers ascending the Linth Thal above Stachelberg. The traveller may descend direct from the summit of the Kammerstock to the Bärenboden, and return to Stachelberg by a path through the forest above the Schreyenbach. Another way is to follow the ridge of the mountain to the W. from the Kammerstock to a point marked by a cross which forms the *Fisiten Pass* (6,728′), connecting the pastoral settlement of the Urnerboden (§ 26. Rte. I) with the Fisiten Alp. He may descend to the latter châlets, and thence to the Bärenboden, or else return by the easier but less interesting way of the Urnerboden.

Sleeping at the châlets of Bärenboden, Prof. Ulrich returned on the following morning to the Fisiten Pass, and then keeping along the N. slopes overlooking the Urnerboden, ascended the Gemschfayrstock, partly by climbing steep rocks, partly by glacier. The ascent employed 5 hrs., and 8 hrs. would be required from Stachelberg. This peak gives one of the finest near views of the Tödi, besides an extensive alpine panorama. The descent was effected on the S. side to the Claridenfirn (Rte. B), and then leaving the glacier near the foot of the Zutreibstock, and passing over a depression between the Altenorenstock and the Gemsistock, the party reached the Altenorenalp, and returned to Stachelberg by a path leading past the Schreyenbach.

The charges for horses, guides, and porters are rather higher in the Linth Thal than in most parts of Switzerland. The best guides for glacier expeditions are Heinrich Elmer of Elm in the Sernfthal; and his son, Rudolf. Joachim Zweifel of Linththal, Albrecht Zweifel and Jacob Logler (same place) have less experience; Peter Hefti of Luchsingen has been also recommended. For the Glärnisch, Andreas Vordermann and Abraham Steussi, both of Glarus, are well spoken of. It may be doubted whether any of these can rank with the good Oberland guides, and the reports of English travellers have not been very favourable. The rates formerly asked were extravagant, but the Swiss Alpine Club has used its influence to establish a reasonable tariff. For the Tödi, the Hausstock, or the Clariden Pass to the Maderanerthal,

30 fr.—for the Bächistock, Vrenelisgärth, Sand Pass, or Kisten Pass, 25 fr.—easier expeditions in proportion, but 10 fr. a day for ordinary excursions is too high. A guide is not required to the Ober Sand Alp, but is indispensable for the glacier passes.

The way from Stachelberg to the Ober Sand Alp, at the N. base of the Tödi, lies throughout amidst very grand scenery, and is deservedly frequented by tourists. A new carriage-road is now open from the village of Linththal along the E. side of the valley through green meadows enclosed between the wooded slopes of the mountains at either side. At the pretty hamlet of Auengüter it passes opposite to the waterfall of the Fätschbach, which is not well seen from a distance, as it lies in a wooded ravine. Rather more than 1 hr. from Stachelberg the traveller arrives opposite to the still finer fall of the *Schreyenbach*. Seen under favourable circumstances, this is a very striking object. It is well worth while to turn aside from the path and reach the bank of the Linth just opposite the waterfall, where the torrent, springing over the precipice, is seen 'coming down in a shower of water-rockets.' Above the Schreyenbach the valley of the Linth rapidly contracts, and the stream issues from a ravine between the bases of the opposing mountains; the path crosses to the l. bank, and mounts the slope, keeping at some distance from the Linth. A comfortable little Inn—Tödi Wirthschaft—was opened in 1863 on the rt. bank, just where the new road comes to an end about 5 m. from Stachelberg. It offers convenient head-quarters to mountaineers, but the prices were at first of the most extortionate character. It is said that the remonstrances of travellers have led to considerable reform in this respect.

The ordinary turning point of ladies who follow this track from the Baths of Stachelberg is the *Pantenbrücke*, reached by a track on the l. bank in 20 min. from the inn. It is a stone bridge spanning the Linth at a vast height above the channel, cut by the stream through the rock. The ravine is not in itself so striking as that of the Via Mala, or some others in the Alps; but the mountains that here rise above the spectator as he looks southward are far grander than those of the Rhætian Pass. After passing the Pantenbrücke, the path is carried along the steep slopes of the Ueli Alp, and before long reaches the opening of the *Limmerntobel*, a ravine far more striking than that traversed below. Here the *Limmern* issues from a dark cleft, some 2,000 ft. deep, cut through the rocks that once united the Selbsanft and the Vorsteckstock. Instead of looking down into the gulf, the traveller looks into it from the level of the stream. It is said that when this is frozen hard in winter, it is possible to traverse this extraordinary cleft, utterly inaccessible at other seasons. The track leading to the Sand Alp traverses the Limmern near the point where by its union with the *Sandbach* (descending from the Tödi) it forms the Linth. Few scenes in the Alps are grander than the defile through which the traveller now passes. On the W. side rise the rocks of the *Altorenstock* and the *Zutreibstock*. The steep declivity at their base is here covered with pine-forest, but farther on they show bare slopes of débris, where the track is often carried away. On the opposite side the tremendous precipices of the *Selbsanft* (9,921′) stretch upwards with scarcely a break, more than a mile in vertical height above the traveller's head. The path returns to the l. bank just at a point where a torrent called Walenbach, fed by a small glacier at the base of the Gemschfayrstock, descends from the Altenorenalp to join the Sandbach. After following the track for some distance along slopes of débris, the traveller once more crosses to the rt. bank opposite to the châlets of the *Unter Sand Alp*, also known as

Unterstaffel. These are reached in 3 hrs. from Stachelberg. They stand 4,101 ft. above the sea, at the very head of the Linth valley, and at the N. foot of the Tödi. Travellers have sometimes found shelter here for the night, but have not reported favourably of the treatment received. This is not, however, a favourable point for a view of the great mountain, as a vast promontory, whose summit is the Ochsenstock, closes the head of the valley, and partly conceals the higher peaks from the spectator. A little above the châlets is the confluence of the three glacier streams that form the Sandbach, which lower down receives the better-known name of Linth. The *Bifertenbach* and *Röthebach*, issuing from the Biferten and Röthe Glaciers, flow from the E. side of Ochsenstock; while the *Oberstaffelbach*, fed by the Sand Glacier and other minor ice-streams, descends from the SW. in an extremely fine waterfall. To see the waterfall to the best advantage, it would be better to keep along the l. bank of the Sandbach instead of crossing to the Lower Sand Alp; but it might be somewhat difficult to climb the steep slopes N. of the fall in order to reach the Ober Sand Alp. The path from the Lower Sand Alp crosses the Bifertenbach, and mounts the rather steep slope of the Ochsenblanke on the S. side of the waterfall, crossing the stream by a wooden bridge as soon as the level of the upper pastures has been gained. Here the scene is completely changed. An undulating plain covered with rich pasture is enclosed between rocky slopes that are surmounted by glaciers and snow-fields. In a few minutes the lower valley is completely lost to view; the peaks of the Tödi rise steeply on the l. more than 5,000 ft. above the plain, while on the other side extends the range of the Claridengrat. Vast masses of glacier whose shattered outline is seen against the sky cover the ridge, and small ice-streams descend at intervals towards the upland valley. The head of the valley turns towards the S., and the space between the Tödi and the Claridengrat is filled by the Sand Glacier, descending from the ridge that forms the watershed between the Cantons Glarus and Grisons. The green oasis in the midst of this stern wilderness is the *Ober Sand Alp*; and the two châlets or sennhütten, 6,358 ft. above the sea, occupied by herdsmen during the summer, are locally known as the Oberstaffel, and may be reached in 4½ hrs.' steady walking from Stachelberg. Travellers have frequently resorted to these châlets for night quarters when about to attempt the ascent of the Tödi, or other glacier expeditions; and the herdsmen, who have not shown themselves either obliging or courteous, seem to have concluded that the liberal payment that they have sometimes received entitles them to exact an equal sum from all future comers. Contrary to what usually occurs in such places in the Alps, they have frequently attempted to enforce quite unreasonable demands.

Although nearly all the ascents of the Tödi (except the earliest) were made from the Ober Staffel, there is no longer any necessity for resorting hither for night quarters. The Swiss Alpine Club has conferred a great benefit on travellers by constructing a hut on the Grünhorn, a promontory from the E. base of the Tödi, 3 hrs. higher up than the Ober Sand Alp. Nor is there any occasion for those who pass the Sand Grat (Rte. F) to sleep at these châlets. The only expedition for which their shelter, such as it is, is really advantageous, is the passage of the Claridengrat (Rte. B), when made from this side. The Swiss Alpine Club hut (7,814', F.W.J.) may be approached directly from the Lower Sand Alp; but those who intend to make the ascent of the Tödi, and have time to spare on the preceding day, will do well to make the détour of about 1½ hr. by the Oberstaffel, and so enjoy the striking scenery of this side of the mountain before taking up their quar-

ters for the night. Though built on a projecting rock the hut is not easily found. It contains an iron stove, but the traveller will do well to carry firewood from the Lower Sand Alp, as well as extra covering. In 1865 a party without a local guide missed the hut, and were forced to bivouac.

It is an easy and pleasant detour from the ordinary path to mount from the Unter Sand Alp along the l. bank of the Bifertenbach to the Biferten Glacier, which both for the beauty of its ice-fall, and the grandeur of the precipices that overhang it to the E. and S., may bear comparison with the most famous in the Alps. The traveller may then ascend the Ochsenstock, and descend to the Ober Sand Alp by the slopes of the Röthe in about $4\frac{1}{4}$ hrs. from the Lower Sand Alp.

Mr. A. W. Moore recommends a course from Stachelberg to the Ober Sand Alp well suited to tolerably active mountaineers. Mounting by the path that crosses the Fisitenbach above the Sehreyenbach waterfall, the highest huts (Ober Staffel) of the Altenoren Alp are reached in $3\frac{1}{4}$ hrs. Thence it is 1 hr. 10 min. to the foot of the Clariden Firn (7,307′) and after mounting for $\frac{1}{2}$ hr. by moraine and débris on the l. bank, the glacier is crossed in 40 min. to the opening between the Zutreibstock and Geissbützistock, whence the Ober Sand Alp is reached in 40 min. more, or in all $6\frac{1}{4}$ hrs. from Stachelberg. View of the Tödi magnificent.

Ascent of the Tödi. It may be well to premise that the Tödi is a decidedly difficult mountain, as is proved by the fact that a large proportion of the attempts to reach the top have been unsuccessful. By the route commonly followed, some positive risk from avalanches is necessarily incurred, and in some seasons the vast crevasses towards the upper part of the ascent may make success impossible. In the early summer the crevasses are more easily crossed, but the risk from avalanches is then greater. It must be observed that all the more serious difficulties are avoided when the ascent is made from the S. side, and, except after fresh snow, that course seems to be quite free from danger when ordinary precautions are observed.

The *Tödi* is a vast mountain mass projecting as a promontory to the N. from the range that divides the basin of the Linth from that of the Rhine. There are three principal peaks. The lowest, and northernmost, which is that seen from the Ober Sand Alp, is called *Sandgipfel* (11,214′). That locally known as *Glärner Tödi*, long supposed to be the highest, and most conspicuous from Stachelberg and other points of view to the N., is now known to be the second in height. The highest summit lies SW. of the Tödigipfel, and is distinguished by the Grisons name *Piz Russein.* This is the summit seen from Zurich and other stations to the W. The second summit measures 11,732 ft. above the sea, while the measurement given in the Federal map—3,623 mètres = 11,886 ft.—is meant to apply to the *Piz Russein.* It must be borne in mind that the latter name is erroneously applied on that map to the Stockgron, a much lower summit lying considerably farther S. A detached peak standing W. of the main mass is the *Klein Tödi.* The central mass of the mountain is enclosed between two glaciers, of which the most considerable is the *Biferten Glacier.* This originates in a vast snow-basin SE. of the Tödi, bounded to the S. by the peaks of the Stockgron, Piz Urlaun, Frisalstock, and Bifertenstock, forming the boundary of the two cantons. The last-named peak is connected with the Selbsanft by a massive wall of precipitous rocks enclosing the glacier on the E. side, and forcing it, after descending at first nearly due E., to bend round first to NE., and then due N. On the opposite side a ridge of rocks called Bifertengrätli, descending NE. from the Tödi, forms the boundary of the Biferten Glacier. The end of this nearest the Tödi is the Grünhorn,

whereon stands the Swiss Club hut. The scenery of the Biferten Glacier is of the highest order, but owing to its steepness it is difficult of access. It includes three great ice-falls, with intermediate steps, called by Prof. Ulrich plateaux, yet very far from level, and much crevassed. The lower part of the glacier, including the so-called first plateau, is so much torn by crevasses as to be practically impassable, though perhaps it may be found less difficult in the early summer. The second plateau is comparatively easy to traverse, as is the upper plateau of névé, but they are divided by a quite impracticable ice-fall.

On the W. side of the Tödi lies the *Sand Glacier* or Sandfirn, which descends towards the Sand Alp from the dividing ridge forming the pass to Dissentis (Rte. F). This does not extend so far S. as the head of the Biferten Glacier. The ridge running due N. from the Stockgron to the Piz Russein overlooks the head of the Val Russein on the Grisons side of the chain, but it appears that the main mass of the Tödi lies altogether on the N. side of the watershed.

Professor Ulrich has given, in the first series of 'Berg-und Gletscher-Fahrten,' a detailed history of the successive attempts to reach the summit of the Tödi, including that made in 1853 by himself with MM. Studer and Siegfried, with Thomas Thut, Gabriel Vögeli, and Johann Madutz as guides, when the second peak (Glärner Tödi) was attained for the first time from the Sand Alp side. Further information is given in the second series of the same work, and in the first Jahrbuch of the Swiss Alpine Club. Since that volume appeared, Dr. Picard has effected the very steep descent from the summit of the Tödi to the Sandgrat. When better known, this may become a favourite route. The following brief notes may, however, suffice for a party accompanied by good guides.

The two highest summits of the Tödi are connected by a gently sloping snow-ridge, lying about ENE. and WSW. whence the Glärner Tödi is reached with ease, and the Piz Russein without serious difficulty, by following a rather sharp snow arête. This ridge is best accessible from the SSE. side by the head of the Biferten Glacier. It was attained for the first time in 1824 by two chamois-hunters, who crossed the ridge N. of the Stockgron, at the point now known as the Porta da Spescha, further mentioned below.

After crossing the Oberstaffelbach opposite the châlets, the ascent is commenced by mounting to the S. the slopes of the *Röthe*, as the northern buttress of the Tödi, whose highest summit is the *Ochsenstock*, is locally called. The summit of the ridge may be reached in 2½ hrs. from the châlets. This overlooks the lower and impassable portion of the Biferten Glacier. To attain the so-called second plateau of that glacier, it is necessary to cross the deep hollow separating the Ochsenstock from the Bifertengrätli, at the head of which lies the Hinter Röthe Glacier. A rapid descent over débris and snow-slopes, passing below the end to the last-named glacier, leads in 1½ hr. to the moraine of the Biferten Gl. A steep climb of 1 hr. over loose stones, ice and snow, leads past the hut, which will serve as the starting-point in future ascents, to the ridge of the Grünhorn, rather more than 8,000 ft. above the sea. This immediately overlooks the more easily traversed part of the Biferten Glacier, but the passage from the rocks to the ice is sometimes rather troublesome. Some travellers have found snow-bridges, others have had to cut steps up a wall of ice 40 or 50 feet in height. On attaining the comparatively level and less crevassed part of the glacier, the main difficulty of the ascent becomes apparent. The upper plateau of névé, by which alone the final ridge of the mountain can be attained, is separated from the second plateau by an ice-fall which has been pronounced utterly impassable by all who have approached

it. There is some reason to think that the obstacle might be surmounted by a snow couloir on the rt. bank of the ice-fall under the rocks of the Bifertenstock. As the glacier at this point is easily passable, it may turn out that this, though involving a considerable détour, is the most advisable course, but it has not as yet been attempted. The way hitherto followed lies through a remarkable ravine or hollow, called *Schneerose*, the base of which is reached in about 1½ hr. from the Grünhorn hut. The name, which is a corruption of Schneerunse, and has much the same meaning as the term *couloir*, used by English mountaineers for want of a vernacular expression, has misled many writers, who suppose it derived from the red colour of the snow occasionally caused by the growth of minute organic germs. The Schneerose is a channel enclosed between precipices of rock, of which that on the W. side is estimated by Prof. Ulrich at 2,000 ft. in height, and serves as the habitual track for avalanches descending from the upper peak of the mountain. The same explorer is satisfied that there is little or no danger from this cause until about 3 P.M., when the sun begins to tell upon the overhanging masses of snow and ice. But the state of the weather and other variable conditions have as much influence on the loosening of avalanches as the direct rays of the sun; and in two subsequent ascents avalanches fell early in the morning, the travellers escaping only by a few minutes from being caught in their track. Hegetschweiler, who made four unsuccessful attempts at the ascent, was with his companions actually struck by an avalanche on one occasion; but being of small dimensions, and formed of fine snow, it did no serious mischief. The point where alone it seems possible to clamber up the rocks to the l. is known to the guides by a streamlet, fed by the glacier above, that trickles down the precipice. When the wall has been climbed, it is usually a matter of some difficulty to gain the level of the upper plateau. The Bifertenstock, Frisalstock (or Bundner Tödi), Piz Urlaun, and Stockgron are all in view, the first alone rising much above the level of the spectator, but the peaks of the Tödi are concealed by the rocks on his rt. The névé mounts pretty steeply, and is cut through by crevasses of great breadth, amidst which it is not difficult to continue the ascent, at first a little S. of W., but gradually bearing to the rt. as the traveller reaches the S. side of the final ridge.

The steep final slope is usually barred by a number of wide crevasses. On one occasion the late G. Hoffmann was forced to return by the impossibility of traversing a crevasse which he estimated at 60 ft. in width. Others have been more fortunate, but have not reached the ridge without some difficulty and considerable delay. Let future travellers look well to their rope, and take a sufficient supply. The summit level may perhaps more properly be called a plateau than a ridge, as it subsides with a gentle slope to the Sand Gipfel, which forms with the two higher summits a triangle measuring about ½ m. on each side. The Glärner Tödi, overlooking the entire Linththal, is reached in a few minutes' easy climb from the ridge. The Piz Russein is less easy of access, being connected with the saddle by a sharp snow arête, and a low but steep wall of ice just below the top. This was first attained in 1861 by MM. Simler and Sand, with H. Elmer of Matt and Gabriel Zweifel of Linththal as guides.

The highest plateau of the Biferten Glacier is bounded on the W. side by the ridge in which the Piz Russein, *Bleisasverdas* (11,234′), *Piz Mellen* (11,086′), and *Stockgron* (11,211′), follow each other from N. to S. In one of the expeditions of Placidus à Spescha (see Rte. C), his guides reached the opening between the Stockgron and Piz Mellen from the head of Val Russein, and thence at-

tained for the first time the summit of the Tödi. Many years before, in 1788, P. à Spescha appears to have attained the edge of the same plateau from the S. side, when, in ascending the Stockgron, he reached the col dividing that peak from the nameless summit E. of it marked in the Federal Map 3,330 m. =10,925 ft. As the summit of the Tödi must be reached from the plateau, it is evident that both these openings, or cols, afford a practicable line of ascent. The first, now called *Porta da Spescha*, is about 10,850 ft. in height; and the second—*Porta da Gliems*—may be 50 or 100 ft. lower. The first recent ascent by the Porta da Spescha was effected in 1863 by a party of the Swiss Alpine Club, headed by Dr. Simler, with H. Elmer and his son as guides. In spite of several halts the col was reached in 5½ hrs. from the Russein Alp (Rte. F), and the summit of Piz Russein in 1¾ hrs more, taking on the way the summit of Piz Mellen. In June 1865, Messrs. Moore and Walker, with Jacob Anderegg, after ascending the Tödi by the usual route, crossed the plateau to the Porta da Gliems, descended to the head of the Gliems Glacier by a short ice-slope, and in 25 min. from the col passed through a tempting gap on the rt., whence they went down to the Russein Alp in 3 hrs. from the top of Piz Russein.

On the S. side the mass of the Tödi is mainly composed of gneiss, which, according to Escher von der Linth, overlies a dioritic granite with large felspar crystals. The summit and the N. flanks are mainly composed of metamorphic slate, in which talc predominates, but is sometimes replaced by felspar, so that the rock sometimes approaches the condition of gneiss and sometimes that of mica slate. There are manifest traces of anthracite, especially at the Bifertengrätli, where the rock in some places assumes the appearance of a quartzite mixed with fragments of talc, which has elsewhere in this region been referred to the *verrucano*. To these strata succeed dolomite and jurassic limestone, similar in character to those developed on a large scale in the Canton Glarus.

Among other rarities the botanist may find *Malaxis monophyllos* in the neighbourhood of the Pantenbrücke, and *Rumex nivalis* in the Alpine region about 7,000 ft. above the sea.

For the ascent of the Selbsanft an Bifertenstock, see Rte. G.

Route B.

STACHELBERG TO AMSTEG BY THE CLARIDEN GRAT.

15 to 18 hrs. exclusive of halts.

This is an extremely interesting expedition, fit only for practised mountaineers who can count upon their strength and endurance, as the passage of the Hüfi Glacier and the Clariden firn is long, and may be very fatiguing when the snow is soft and deep.

Before giving an account of the pass, it is necessary to premise some observations on the topography of the Clariden Alps, comprising in that term the entire range described below. This has been rendered obscure by the discordance of maps, and by the variety of names that are applied to the various summits by the herdsmen and hunters of the adjoining valleys.

The Clariden Alps form a continuous range extending from WSW. to ENE. exactly parallel to the Tödi Chain, between the neighbourhood of Amsteg, in the Canton Uri, and the head of the valley of the Linth. The W. end of this range is separated from the Crispalt and the Oberalpstock by the Maderanerthal, while the E. extremity is cut off from the Tödi by the valley of the Oberstaffelbach, or Ober Sand Alp. The two ranges are, however, linked together by a lofty and broad transverse ridge extending from N. to S. between the Claridenstock and the Catscharauls. This ridge, known as the Clariden Grat, is covered, save here and there where some rocky point protrudes through its surface, with a

massive coating of glacier called Clariden firn.

The following are the chief summits of the Clariden Alps, reckoning from W. to E., and premising that the names of the first four, as used in the Schächenthal and adopted on the Swiss Federal Map, are different from those used in the Maderaner Thal, which are given in brackets.

1. *Kleine Windgelle* (9,847′), or Seewelistock—(Mad. Th., Grosse Windgelle). The Maderaner people give the name Kleine Windgelle to a detached peak W. of the summit, and unnamed on the map, called Fensterstock by Hoffmann.

2. *Grosse Windgelle* (10,463′)—(Mad. Th., Kalkstock). The ascent of this and that of the Kleine Windgelle are noticed in § 30, Rte. B, among excursions from Amsteg.

3. *Gross Ruchi* (10,295′)—Mad. Th., Alpgnoferstock). This is separated by a hunter's pass called Krükeli from

4. *Klein Ruchi* (9,637′), or Zingelstock—(Mad. Th., Kalkschye).

5. *Scheerhorn* (11,142′), a double-pointed peak, the highest of this range, and known by the same name on both sides.

6. *Kammlistock* (10,609′).

7. *Claridenstock* (10,709′).

8. *Bocktschingel* (10,086′).

9. *Gemschfayrstock* (9,733′). As mentioned in the last Rte., a ridge little exceeding 7,000 ft. in height extends ENE. from this peak to the Kammerstock, near Stachelberg.

The summit of the ridge connecting the Claridenstock with the *Catscharauls* (10,049), a peak in the main chain of the Tödi, W. of the Sand Pass (Rte. F), is a vast irregular plateau from 9,000 to 9.700 ft. in height, many square miles in extent, and sustaining the great accumulation of snow and ice called *Clariden firn*. This plateau sinks gradually to the W. until it forms a defined ice-stream, and assumes the name *Hüfi Glacier*. Between the Scheerhorn and the *Düssistock* (10,701′) this glacier forms a magnificent ice-fall, and then stretches with a gentle slope into the head of the Maderaner Thal. It may here be mentioned that the Düssistock, the highest peak on the S. side of the glacier, is sometimes called Hüfistock, but that name properly belongs to one of its secondary peaks. The name *Maderanerthal*, again, is little used by the people of that valley. The lower part is on the spot commonly called *Kärstelenthal*, while the head of the valley is known as *Ruppleten*.

The range of the Clariden Grat presents no summits that stand much above the general level. The peaks that appear to project boldly when viewed from the Ober Sand Alp are merely promontories of gneiss rising very little, or not at all, above the fields of névé that lie behind them. Viewed from the above-mentioned station, the most prominent points seen in succession from SW. to NE. are the *Hinter Spitzälpeli* (9,842), *Vorder Spitzälpeli* (9,596′), *Geissbützistock*, and *Zutreibstock* (8,688′).

At the S. end, between the Catscharauls and Hinter Spitzälpeli, the Clariden firn unites with the Sand firn, where the latter closes the head of the valley of the Oberstaffelbach. N. of the Hinter Spitzälpeli, and between it and the Claridenstock, is the snow-shed between the névé feeding the Hüfi Glacier, and that which is drained into the valley of the Linth. On the E. side of the snow-shed, the Clariden firn stretches for several miles along the flanks of the Bocktschingel and Gemschfayrstock, sending down short tongues of glacier towards the Ober Sand Alp, and a rather more considerable ice-stream to ENE., on the N. side of the Gemsistock, whence issues the Walenbach that waters the Altenorenalp. In a deep hollow on the N. side of the Clariden Stock lies the *Clariden Gletscher*. The upper plateau is connected with this by a snow col on the E. side of the peak, but it is doubtful whether a passage can be effected at that point. Farther W. is the *Gries*

Gletscher, lying N. of the Scheerhorn and Kammlistock. Between them is the *Scheer Joch* (9,269′), also called Scheerlücke, affording access to the upper plateau of the Clariden firn from Unter Schächen or the Klausen Pass. From thence the *Kammlistock* (10,609′), was climbed, in 1864, by M. Hauser. It seems certain that the *Scheerhorn* (11,142′), is more easily reached from this side than from the S., by which it was first attained, in 1842, by the late G. Hoffmann, and again, in 1863, by Herr Finiger.

The *Claridenstock* (10,709′), is accessible by the steep rocks of its SW. face. See the account of the first ascent by Professor Rambert, in 1863, in the Swiss Club Jahrbuch.

The first published account of the pass to Amsteg is that by Prof. Ulrich in the second series of ‘ Berg-und Gletscher-Fahrten.’ In the year 1863 it was effected by Mr. Moore and friends (see below); and a few weeks later by another English party going in the opposite direction, with two Stachelberg guides named Albrecht Steussi and Johann Zweifel. Taking the more southern course, recommended below, the second party were involved in serious difficulties, owing to the incapacity of their guides, and were rescued by some chamois hunters who descried their position. Amsteg was reached in 15½ hrs. from the Ober Sand Alp.

The pass may best be taken from the W. side, starting from the new inn (zum Schweizer Alpenklub) at *Waldibalm*, 1 hr. below the Hüfi Glacier. The scenery going that way is more striking, and the Maderanerthal men better guides. If approached from the Glarus side it is necessary to sleep at the Ober Sand Alp. The following account is from the pen of Mr. Moore, who was accompanied by Messrs. Morshead and Short, with Christian Almer, Peter Perrn, and Moritz Andermatten, all first-rate guides, besides Jos. Maria Trösch, who demanded 30 fr. and a bonnemain for the expedition—rather too high a charge.

‘ The distance from Amsteg to the Baths of Stachelberg is very great. It took us 13½ hours’ actual walking to reach the Lower Sand Alp from Amsteg: 9¼ hours to the Grat, and 4¼ hours’ descent. A better plan for any one starting from Amsteg would be to pass the first night in the châlets of Waldibalm, and so get over a large portion of the glacier before the sun had softened the snow, and probably reach Stachelberg before dark, thus avoiding the Sand Alp châlets, which are most filthy, and tenanted by a set of extortioners who consider stray travellers fair game. The actual difficulties of the route are not great, but, owing to the immense extent of snow-fields to be traversed, there are few passes more laborious, and for the same reason it should be attempted only in the clearest weather. In a fog, a party might wander for hours over the plains of snow on either side of the Grat, and be unable to hit off the correct line of march. The scenery, especially on the side of the Linth Thal, is of the grandest character, while the Maderaner Thal is one of the most charming valleys of the Alps.’

‘ The Maderaner Thal opens out immediately behind Amsteg. The entrance is very narrow, and the ascent for the first 20 min. exceedingly steep; but, at the end of that time, the path runs along the l. bank of the stream, over gently-undulating ground, rising very gradually. The vegetation is unusually luxuriant, and the general scenery very picturesque, the ranges rt. and l., though not of the first order, being sufficiently elevated to be striking and attractive objects. The rocks on the N. side are very precipitous, and are said to be the favourite resort of chamois. The population are a fine-looking set, especially the women, who wear a very becoming head-dress, in which a red handkerchief is a prominent feature. Up the first lateral valley on the S., a path leads over the Kreuzli Pass to Dissentis in the Vorder Rhein Thal.’

The path crosses to the rt. bank of

the Kärstelenbach above the village of Bristen, returns to the l. bank about 1 hr. farther on, and after passing the châlets of Stössi reaches in 3 hrs. from Amsteg a bridge which leads to the comfortable new inn at Waldibalm. If it is not desired to make a halt at the inn, the path on the l. bank must still be followed, and very shortly the foot of the great Hüfi Glacier appears in sight.

In 50 min. rapid ascent from Waldibalm, the lower end of the glacier is reached, after passing beneath a series of fine waterfalls, derived from the Brunni Glacier (over which lies a pass to Dissentis), tumbling over the precipitous rocks on the S. side of the valley. The Hüfi Glacier, although that portion of it which alone is visible from the valley is not very attractive, is one of the grandest in the Alps. It takes its origin in an enormous field of névé, which is also the common source of the Clariden firn and Sand firn, at the head of the Linth Thal. After running for some distance in a westerly direction, it is compelled to take a sharp turn to the SW., in order to round a long spur of the Düssistock on the l. bank. At the same point it is compressed into a comparatively narrow space by a similar spur coming down from the Scheerhorn on the rt. bank In the contracted channel between the opposing rocks, it forms a superb ice-fall, comparable to any in the better-known portion of the Alps. The existence of this fall would not be suspected from the point where the glacier is first reached: the apparent absence of any difficulty ahead is so complete, that the traveller is tempted to get on to the ice at once, and push straight up its centre. We should certainly have done so, but for Trösch's energetic opposition. He was undoubtedly right; for although it would be tolerably plain sailing as far as the foot of the ice-fall, that obstacle would be found quite impassable, at any rate without a great expenditure of time. A faint track must be followed, rising very steeply at first, along the lower slopes of the Düssistock, high up above the l. bank of the glacier. This track is rough and narrow, and in the dark would be difficult to traverse, but by daylight presents no difficulty, merely requiring the exercise of ordinary caution. After crossing a desolate waste of stones, apparently fallen from the side of the Düssistock, where it is advisable to take advantage of the last water which will be found for many hours, the last hut is reached in 1¼ hr., a wretched den, in a half-ruined state, where shelter would be sought only in the last extremity. Here all path ceases, and a rough scramble ensues for 20 min. up the shoulder of the Düssistock immediately behind the hut. On cresting the ridge, the traveller finds himself on a level with the glacier, at a point above the great ice-fall, which has thus been turned with ease. Here, 5½ hrs. from Amsteg, he may take to the ice. The rope should be at once put on. For an hour it is necessary to thread a perfect labyrinth of crevasses, the glacier, though nearly level, being fearfully dislocated. The direction which it is best to follow must, of course, vary with the circumstances of the season. We found it best to hug the l. bank, but were exposed to some risk from the small hanging glaciers on the side of the Düssistock, fallen ice-blocks from which were lying in all directions. This is, indeed, the most critical part of the whole route. The crevasses are exceedingly intricate, mostly covered with snow, and arranged apparently according to no particular order or system. In a fog, and with guides not well acquainted with the locality, a party might be involved in considerable danger and difficulty, and find the task of extrication no light one. On emerging from this treacherous bit of glacier, the traveller stands at the edge of a vast field of névé, bounded rt. and l. by rocky ridges of very trifling elevation, and stretching away in front, in a succession of gentle snow-slopes, to the

Grat between the Claridenstock and Catscharauls. The length of time necessary to traverse this depends largely upon the state of the snow. Early in the season, and rather late in the day, it took us 2½ hrs. of most laborious walking to reach the northern end of the Grat, under the Claridenstock, at which point all former passages have also been made. The apparent distance is not great, but the slopes are even more than usually deceptive. The height of the pass we estimated at about 9,800 feet (9,842?), but had no means of determining it with accuracy.'

'The distant view is not very extensive, comprising to the S. the peaks above the Medels Glacier, and the Adula group, and to the N. the whole length of the Linth Thal. But this deficiency is more than compensated for by the view of the majestic Tödi, which is seen in close proximity, rising from a bed of broken glacier, a mighty fortress of rock, so precipitous that, except here and there, no snow can lie on its rugged buttresses. This mountain, in its isolation and boldness of form, is worthy to be compared to the Matterhorn, to which indeed, as seen from Breuil, it bears considerable resemblance. The ranges of the Selbsanft and Bifertenstock on the opposite side of the Linth Thal are also very fine, presenting superb faces of rock, and altogether the whole scene may rival any other of the same character in the High Alps. The descent towards the Linth Thal has hitherto been effected by the Clariden firn, which, after flowing in a NE. direction, comes to an end near the Altenoren Alp, above the Pantenbrücke. It does not appear possible to gain this Alp directly from the glacier, the foot of which is hemmed in by the cliffs of the Gemschfayrstock and Altenorenstock. By quitting the glacier near the Zutreibstock on its rt. bank, and climbing a ridge between the Altenorenstock and the Gemsistock, it is possible to get down into the gorge of the Walenbach, and, crossing the torrent, reach the Alp, whence a path leads to Stachelberg. But this way is both difficult and circuitous; that adopted by us, following the steps of our predecessors, is in all respects preferable. We kept on the upper slopes of the glacier, with the Claridenstock close upon our l. for some time; then, beginning to descend, traversed a series of steep snow-slopes, until we had passed the Spitzalpeli, a rocky peak, or rather ridge, rising on the rt. bank to the height of only a few feet above the snow. Between this peak and that called on the Federal Map Geissbützistock, the Clariden firn sends down a small branch in a south-easterly direction, towards the Upper Sand Alp. Crossing the head of this tributary to its l. bank, we quitted the ice in about 3 hrs. from the Grat, having been somewhat detained by a fog, and descended to the upper châlets by the steep rock and grass slopes at the side of and below the glacier, without encountering the slightest difficulty. We went on in the dark to the Lower Sand Alp, which was reached in 1¼ hr. from the time we got off the ice. Thence to Stachelberg next morning 3 hrs. During the latter part of the descent, we had a perfect view of the Sand firn, and discovered, what we had before suspected, that by making for the S. end of the Grat under the Catscharauls, and descending to the Sand Alp by the Sand firn, much time would be saved on both sides. [A.W.M.] The last suggestion has been adopted with much advantage by several recent travellers. By that way Messrs. Girdlestone and Trueman reached the hut by the Hüfi Glacier from the Tödi Wirthschaft above Stachelberg in 8¼ hrs.' actual walking.

The course described by Professor Ulrich differed from that followed by Mr. Moore and his companions. He crossed the Hüfi Glacier immediately below the ice-fall, and continued the ascent on the rt. bank of the glacier by

very steep rocks forming a S. buttress of the Scheerhorn. This involves a laborious and difficult climb, but has the advantage of avoiding the risk of ice-avalanches from the Düssistock. Those who take the course above suggested, of crossing the Clariden Grat at the point where it joins the Sand firn, must necessarily keep to the left bank of the Hüfi Glacier. [In 1867 Mr. Sowerby ascended the Düssistock, and returned to the inn at Waldibalm in 10 hrs. He describes the view as first-rate.]

Route C.

BASLE TO DISSENTIS, BY SCHAFFHAUSEN AND COIRE.

	Swiss post leagues	Eng. miles
Waldshut (by railway)	11½	34½
Schaffhausen	7½	22½
Winterthur	6⅔	20
Wallisellen	3¾	11¼
Wesen	13⅓	40½
Sargans	6⅔	20
Coire	6¼	18¼
Reichenau (by road)	2	6
Ilanz	4¾	14¼
Trons	4	12
Dissentis	2⅓	7⅛
	69	206¾

The railway recently opened from Waldshut to Schaffhausen, and the line connecting that town with Winterthur, enable travellers from Basle bound for the E. of Switzerland to visit the Falls of the Rhine with little delay, and the line here described is but little more circuitous than that by Olten and Zurich. A traveller anxious to reach Coire in one day from Basle, may start at 6 A.M., and, after a delay of 5½ hrs. for breakfast and seeing the Falls, may take the Winterthur train at the Dachsen station. From Winterthur he may continue his journey by the Wallenstadt line, after a delay of 1¾ hr. at Wallisellen, or else take the more circuitous route by Rorschach, which rejoins the other train at Sargans. A far more satisfactory way to see the Falls is to halt on the first day at one of the hotels mentioned below, and to start about 7 A.M. on the following morning, arriving at Coire at 2 P.M.

If bound for Schaffhausen, or other places in the NE. of Switzerland, travellers at Basle should take their tickets at the German station at Klein Basel, *not at the Central Swiss station.* A diligence now runs daily from Coire to Dissentis, and thence by the Oberalp Pass to Andermatt (Rte. D) in 13 hrs. Carriages may be hired at Coire.

After quitting *Klein Basel*—the suburb of Basle lying on the rt. bank of the Rhine—the rly. to Schaffhausen enters the Duchy of Baden. About 20 m. from Basle is *Säckingen* (Inn: Löwe). The ancient convent, whose two towers are conspicuous from the village, was once of great importance, and held seignorial rights over the entire Canton of Clarus. *Lauffenburg* (Inn: Post) is a small Swiss town connected by a roofed bridge with the rly. station on the rt. bank. The position is very picturesque, and the river here forms dangerous rapids, wherein Lord Montague, the last male heir of his family, was drowned. The next place of any note is *Waldshut* (Inns: Rebstock, good and reasonable; Bädischer Hof), where a branch of the Swiss Nordostbahn—or North-eastern Railway—crosses the Rhine, and connects the Duchy of Baden Rly. with the Baden station on the way from Olten to Zurich (§ 26. Rte. B). Between Waldshut and Schaffhausen the Rhine makes a considerable bend to the S.; and the rly. quitting its banks, is carried ENE. to Erzingen, where it leaves German territory, and enters the Canton Schaffhausen, one of the smallest in Switzerland. and the only one lying on the N. side of the Rhine. The traveller intending to visit the Falls may best leave the rly. at the *Neuhausen* station, the last before reaching Schaffhausen, and considerably nearer to the object of his journey.

The *Falls of the Rhine* (Germ., Rheinfall) are often called Falls of Schaffhausen, but are more than 2 m. from the town. Several Hotels are

open to receive visitors, of whom many are induced to halt here for days or weeks. On the rt. bank, and near to the Neuhausen station, is the Schweizer Hof, with a pretty garden and excellent view of the Falls, large, well kept, clean, and reasonable—charge *en pension* 50 fr. weekly. The landlord has acquired the exclusive right of fishing here for himself and his guests. On the same side, nearer the station, but less well situated, is the Bellevue. On the opposite, or l. bank, the old Castle of Laufen, ¾ m. from the Dachsen station on the line from Schaffhausen to Winterthur, has been converted into an hotel. There is a good and cheap inn (Hotel Witzig) in the village of *Dachsen*, about ¾ m. from the Falls.

The waterfall is unique in Europe for the mass of the stream, yet visitors who have been prepared by reading poetical descriptions of the scene are apt to experience a feeling approaching to disappointment. The height is not great—varying from 50 to 60 ft.; nor does the river spring over the ledge at a single bound, as in most of the more famous alpine Falls. Yet a near approach to the rushing cataract, especially on the S. side, where the mighty mass and resistless force of the waters is best appreciated, cannot fail to make a deep impression. The best point for enjoying a near view is a strong wooden pavillon, called Fischetz, reached through the grounds of the castle of Laufen. This projects into the spray of the waterfall, which rushes down from above, and seems momentarily to threaten the spectator. The wide circular basin below the Falls may be safely crossed in a boat, though the water is in places much disturbed. The boatmen land visitors from the right bank a little below the Fischetz, and also take them to the central rock which rises in the middle of the stream, and divides the cataract into two portions; there is no difficulty in climbing up to the top of the rock. Those who dislike to undergo some tossing in a boat, may cross the river by the bridge a short distance above the Falls, near which is a large new hotel (H. Rhemfall). The visit to the Fischetz should on no account be omitted. The Falls are sometimes illuminated after nightfall by electric light, and the effect is said to be marvellous. Immediately opposite the Falls, on a point of land projecting into the stream, is the small castle of *Woert*, now converted into a restaurant, where a tower, fitted with a camera obscura, affords one of the best general views.

Among the excursions available for those who remain some days here, one of the most interesting is that to the monastery of *Rheinau*, built on an island in the Rhine. It was founded in 778, and was long a place of importance, the abbot having enjoyed princely rank. The library is said to contain valuable MSS. Those who intend to follow the rly. from Schaffhausen to Winterthur, and do not care to visit the former town, may take the train at the Dachsen station, near Lauffen (see below).

Schaffhausen (Inns: Krone; Schiff; Falke; Schwan; all in the town: on the S. side of the Rhine, near the landing-place of the steamers, is the Hirsch, comfortable and reasonable) is a curious old town on the rt. bank of the Rhine, well deserving a visit from the lovers of mediæval architecture. The walls and gateways, and the halls of the Zünfte or guilds, are in the style of the old Suabian towns. On rising ground is the castle called Munoth, with walls 18 ft. thick, and curious bomb-proof casements.

A hill, called *Hoh Randen* (3,008′), about 10 m. N. of the town, near the road leading through the Black Forest to Carlsruhe, commands a view of the L. of Constance, and the northern cantons of Switzerland, extending to the chain of the Alps, and, in very clear weather, to Mont Blanc.

The railway from Schaffhausen to Winterthur is carried for about 1½ m.

along the N. bank of the Rhine, crosses the river above the Falls, and then plunges into a tunnel under the hill on which stands the castle of Laufen. After issuing from the tunnel, passengers have a glimpse of the Falls, and presently stop at the *Dachsen* station, whence omnibuses ply to the Hotel at the castle. The rly. then traverses a rich well-cultivated tract lying in the Canton Zurich, but there is no object of much interest on the way to *Winterthur* (Inns: Adler, nearest the rly. station, good; Löwe; Krone; Wilde Mann, good), a thriving modern town, with nothing to interest strangers. Here the rly. from Romanshorn on the L. of Constance joins the branch from Schaffhausen.

The rly. to Zurich follows the banks of the *Töss*, passing within sight of the castle of *Kyburg*, the ancient stronghold of a race that held dominion over a great portion of the N. of Switzerland. Their domains passed to the house of Habsburg, and the Emperor of Austria still retains among his many titles that of Count of Kyburg. Leaving the valley of the Töss, the rly. bends to S.W. amidst green hills, and before long enters the valley of the *Glatt*. At *Wallisellen*, 6 m. from Zurich, the traveller reaches the junction of this line with the rly. leading to Wesen and Coire. As mentioned in Rte. A, travellers going from Zurich to Rapperschwyl or Wesen may avail themselves of this rly., instead of taking the lake steamer.

About 5 m. SE. of Wallisellen is the little lake of *Greifensee*, with a village and an old castle bearing the same name. The latter is famous for the gallant resistance made by a handful of men forming the garrison to the Swiss confederates under Itel Reding, in 1444. The execution of the commander and the sixty or seventy men under him who survived the taking of the castle, was one of the few acts of cruelty that disgraced the Swiss leaders in the heroic ages of their struggle for independence.

Uster (Inn: Kreuz) is a pretty town with a fine castle, commanding views of the Alps, beyond which the rly. is carried through a marshy tract, first to SE., then turning nearly due S. From the *Bubikon* station the pedestrian may, in 1½ hr., ascend the *Bachtel* (3,671′), and gain from the summit one of the finest views in this part of the Canton Zurich. There is an Inn on the top. At several points the rly. commands distant views of the Glarus Alps. Entering the Canton St. Gall, the traveller soon reaches the Lake of Zurich at

Rapperschwyl, described in Rte. A. The rly. is carried along the shore for about 5½ m. to *Schmerikon* (Inn: Rössli), at the E. end of the lake (Rte. A), and 2 m. farther arrives at *Uznach* (Inn: Linthhof, not bad), a small but busy town, with a large cotton-mill driven by water power, and with some considerable beds of lignite (whose age is questioned by geologists) in the neighbourhood. The rly. now avoids the marshy plain that has been partly drained by the Linth canal (Rte. A), and is carried SE. along the base of the hills, commanding at intervals fine views of the mountains that enclose the Linth Thal. The Wesen station is some way from the village. The refreshment-room is ill spoken of; but there is a good little Inn (Hotel Speer) close at hand, and commanding a fine view.

Wesen (Inns: Schwert; zum Speer; both fairly comfortable and very reasonable, *pension* 4 fr. daily, without wine) is a small village, beautifully situated at the W. end of the *Lake of Wallenstadt* (Germ., Wallensee). This, which is 1,393 ft. above the sea, and from 400 to 600 ft. in depth, ranks high among alpine lakes for the grandeur of its scenery. It affords one of the best instances of the type called by M. Desor *Lacs de Combe*. Excepting the Bay of Uri, at the E. end of the Lake of Lucerne, there is none in Switzerland that is enclosed by such high and steep mountains. It is, however, defi-

cient in variety, being simply a deep and straight trench, about 10 m. long and $1\frac{3}{4}$ m. wide, lying due E. and W., between two parallel ranges of mountains, wherein the same views are repeated with little variation at whatever point the spectator takes his stand. This remark holds especially as to the range of the *Churfirsten*, on the N. side of the lake. Seven peaks are commonly reckoned; but there are nine or ten with distinct names, and equally deserving of notice. The average height of these summits is above 7,000 ft., and the *Scheibenstol* reaches 7,554 ft. This range is best visited from Wallenstadt, at the E. end of the lake (§ 28, Rte. M). The mountains on the S. side are more varied in form. The lower slopes are gentler, and are broken by several narrow glens and deep ravines. Behind these rise several rugged peaks, of which the most conspicuous is the Mürtschenstock (8,012′).

The neighbourhood of Wesen abounds in interesting excursions for pedestrians, of which the following may be specified:

The *Biberlikopf*, about 1 hr. W. of Wesen, commands views of the L. of Wallenstadt to the E., and that of Zurich to the W.

The village of *Amden*, or Ammon, is reached in about $2\frac{1}{4}$ hrs., passing a place called Fly, where there is a country Inn. The ascent by a path carried up steep cliffs gives beautiful views over the lake, and the position of the village is very fine. In returning, the traveller may take a steep downward path, passing through a ravine with a fine waterfall of the Beyerbach, and reach the lake shore at *Bätlis*, whence a boat will take him back to Wesen.

The paths to Glarus from Mühlehorn and Murg (mentioned in Rte. A) abound in fine scenery.

The Niedersee and Obersee above Näfels (Rte. A) are both well worth a visit.

There is a curious cavern called Geisterstube, with the ruins of a small fort, immediately above the village of Wesen.

The ascent of the Speer, the most interesting of all the excursions from Wesen, is described in § 28, Rte. K.

Since the opening of the rly. from Wesen to Coire, the steamers on the lake have been discontinued, and a traveller wishing to enjoy the fine scenery must engage a boat to take him to Wallenstadt. The railway, after traversing the Linth Canal and then the Escher Canal, is carried along the S. shore, passing through a succession of tunnels with brief intervals in which the traveller gains glimpses of the lake, and of the grand precipices of the Mürtschenstock. About 5 m. from Wesen is *Mühlehorn*, with a good country Inn (zum Seegarten), very finely placed at the opening of a savage ravine descending from the Mürtschenstock. This offers a tempting halting-place for a mountaineer. On the opposite shore of the lake is the fine waterfall of the Beyerbach, and above it to the l. the church of Amden.

Murg (Inn: Kreuz) lies in the Canton St. Gall, $2\frac{1}{2}$ m. beyond Mühlehorn, at the opening of the Murgthal, a very fine glen lying E. of the Mürtschenstock. At its head, extending to the S. of that peak, are several small lakes one above the other, the highest of which is 5,981 ft. above the sea. A path leads that way to Engi, in the Sernfthal (Rte. K). Beyond Murg the train passes below the village of *Quarten*, and then calls at the *Unterterzen* station. These names, with that of Prömsch (prima), Gunz (secunda), and *Quinten* (quinta), recall the period when these were Roman stations. The last-named, sometimes erroneously called St. Quinten, is the solitary village on the N. shore of the lake, and is difficult of access save by water. Between 4 and 5 m. from Murg is the rly. station for

Wallenstadt (Inns: Goldenen Adler, by the lake, good and cheap; Churfürsten, by the station, good; Hirsch), a

small town in an unhealthy situation on the N. side of the *Seez* stream, which has been embanked with a view to drain the marshy tract on either bank. This is the best place for excursions among the Churfirsten range (§ 28, Rte. M).

The valley connecting Wallenstadt with Sargans is interesting to the geologist and the physical geographer. It affords one of the few instances where the course taken by a great river through a mountain country seems to depend on accident rather than on orographic conditions. After uniting in a single bed all its principal sources, the Rhine flows from Reichenau, past Coire, till, arriving near Sargans, it has to choose a course between two valleys of about equal depth. The course actually taken by the stream lies NNE. to Vaduz (§ 28, Rte. C), while the other valley is that traversed by the rly. between Wallenstadt and Sargans. The barrier is so low, that a dam 25 ft. in height thrown across the present course of the river would suffice to divert it into the lake of Wallenstadt; and as the bed of the valley seems to be formed altogether of alluvial deposits, it is likely that the river would soon scoop out for itself as deep a channel as that through which it now flows.

The distance from Wallenstadt to Sargans is about 9 m. Near to the former town the ruined castle of Gräplang is seen on the rt. hand. It dates from the ninth century, and was long the seat of the ancient family of Tschudi, which boasts a genealogical tree showing an unbroken descent from the year 870. Many of their monuments are preserved in the church of *Flums*, a station 2 m. from Wallenstadt at the opening of the *Flümserthal*. The summits of the *Mageren* (8,294′) and the *Spitzmeilen* (8,218′) are seen at the head of the glen, and a track passing E. of the latter peak leads to Matt in the Sernfthal (Rte. L). Opposite Flums, the chapel of St. George, perched on a rock on the N. side of the valley, is a prominent object. The next rly. station, nearly 5 m. beyond Flums, is *Mels*, at the opening of the Weisstannen Thal (Rte. L). Near at hand is *Plons*, where the iron ore extracted from the Gonzen mine (§ 28, Rte. C) is smelted. About 2 m. from Mels is the Sargans Junction station, where the line from Wesen to Coire meets that from St. Gall and Rorschach. The station is about a third of a mile from the small town of Sargans (described in § 28, Rte. C). The scenery of the Rhine valley is here very fine.

The rly. is carried ESE. parallel to the Rhine about 3½ m. from Sargans to the station, which is ½ m. distant from the Baths, of

Ragatz (Inns: Quellenhof, large new house, and Hof Ragatz, kept by the same proprietor, fairly good, often crowded, prices *en pension* reasonable, not cheap to passing travellers; Hôtel Tamina, new, pretty good; Schäfle; Krone; H. Calanda; and several others; besides *pensions* for those who use the waters, of which P. Anderes is recommended). Those who come here for the sake of the mineral waters usually prefer to lodge at the Hof—baths supplied directly from the hot springs at Pfäfers. The situation of Ragatz, close to the opening of the gorge of the Tamina, and in a part of the valley of the Rhine where the stream is enclosed by many fine mountains, is extremely picturesque, but too hot to be agreeable to those who take active exercise, being only 1,628 ft. above the sea. It is chiefly frequented by persons who prefer it as a residence to Pfäfers while using the waters. These reach the Hof Ragatz in pipes, preserving a temperature of nearly 97° Fahr., and are supposed to be as efficacious as when used on the spot.

In the cemetery here is a marble monument to the philosopher Schelling, erected by the late King of Bavaria.

Of the many excursions that may be made from hence, the most remarkable in every way is that to the hot springs of *Pfäfers*, which burst out in

the gorge of the Tamina, about 2½ m. above Ragatz. The Baths are now accessible by a good char-road. Small vehicles mount in ¾ hr. and return in less than ½ hr.—charge 5 fr. From its opening close to Ragatz the valley of the *Tamina* is a mere ravine, with high and steep mountains rising on either hand, and the walk or drive to the Baths by the road along the l. bank is in itself sufficiently interesting. The establishment is a large monastic-looking building, capable of accommodating 200 patients. Lying in the depths of a ravine between walls of dripping rock, the position of these baths is far from attractive. Save for those who are able to climb the steep paths that lead to the upper valley, there is no exit except by the single road leading to Ragatz; and it is not surprising that most patients prefer the finer position and greater sense of freedom that they find there. Immediately above the large stone hall where patients drink the waters, the nummulitic limestone rocks on either side of the Tamina rise in vertical walls, leaving a mere strip of sky overhead. A pathway is partly cut in the rock, partly carried along planks supported on iron hold-fasts, 30 or 40 ft. above the torrent. After passing a doorway, where 1 fr. is charged for admission to each visitor, the cleft becomes still narrower, the rocks close overhead, and only here and there some gleams of daylight reach the bottom of the abyss. Amidst the gloom, which is nearly pitch darkness except in the middle of the day, the traveller advances along the frail pathway. This has of late years been made more secure by a hand-rail. About ¼ m. from the Baths the actual sources are reached. The water issues from several clefts in the rock at a temperature of about 100° Fahr., and is received in a reservoir whence it is led in pipes to the neighbouring Baths, and in part to Ragatz. The effect of returning to daylight from this extraordinary chasm is scarcely less striking than the entrance to it, and the excursion should on no account be omitted by travellers visiting this part of Switzerland.

The waters are used both internally and for bathing, and are said to produce a marked effect in cases of disordered nerves, in diseases of the bowels, in hemorrhoids, and some forms of rheumatism. They are almost tasteless, and chemical analysis fails to detect any active principle save a slight proportion of alkaline and earthy salts. Said to have been discovered in the eleventh century, the spot was long nearly inaccessible. Patients were let down by a rope from the rocks above with a supply of food, and were hauled up again when the period of their probation had expired. At a later date the steep path leading from the village of Pfäfers to the present Baths was constructed. The first building was erected in the seventeenth century. A further progress was effected when a mule-path was carried along the W. slope of the valley from Ragatz to the hamlet of *Valens*, and thence down to the Baths. That circuitous and inconvenient mode of access was finally replaced by the present char-road, which has done much for the convenience of patients, but has also lessened the singular effect of the place to visitors who merely come to enjoy a striking scene.

In returning to Ragatz, most pedestrians make a circuit by the village and convent of Pfäfers. These lie on the E. side of the Tamina, about 600 ft. above the Baths, or 2,800 ft. above the sea. The rocks on the side of the gorge opposite to the Baths being quite inaccessible, the ascent is by a steep path above the l. bank. After awhile the path descends to the l., and crosses the torrent (here invisible) immediately over the pathway which had been traversed in visiting the hot springs. A passenger not aware of the fact would not suppose that from 100 to 200 ft. below him a considerable stream rushes down through its concealed

channel. In some states of the weather the vapour from the hot springs is seen rising through the very narrow cleft which must once have given passage to the Tamina. A steep staircase formed of logs or the roots of trees leads up to the meadows above the rt. bank. Here a path to the rt. leads to Vättis (Rte. K), while that to the l. is the way to the village of *Pfäfers* (Inns: Taube; Krone). Close at hand is a large building now a lunatic asylum, but once one of the richest and most powerful monastic institutions in Switzerland—the Benedictine Abbey of Pfäfers. Founded in 713, the community held sovereign authority over the neighbouring country, and the abbots long had princely rank. Pillaged and partly ruined by the French, it was finally suppressed in 1838 by the Cantonal Government of St. Gall. The building commands a noble view, extending on the one hand to the L. of Wallenstadt and the Churfirsten, and on the other to the fine peak of the Falkniss (8,338′) on the E. side of the Rhine, the most conspicuous object in all the views from the neighbourhood of Ragatz. A rough char-road descends rather steeply from Pfäfers to Ragatz, the distance being a little over 2 m. On the rt., descending, is the ruined castle of Wartenstein. The pedestrian may prolong his walk by following a track that leads E. from the village along the slope of the *Piz Lun* (4,165′), and descend to the high road leading to Coire near the village of Mastrils. He may then return to Ragatz, or else cross the bridge over the Rhine that leads to the rly. station at Landquart (see below).

Among the shorter excursions from Ragatz, may be mentioned the ruined castle of Freudenberg, lying W. of the village, and that of Wartenstein (already mentioned) by the road to the village of Pfäfers. Both of these, especially the latter, command fine views.

Another pleasant excursion is that to the fortress of Luziensteig (§ 34, Rte. C), reached by carriage-road in about 4 m. from Ragatz.

The mountaineer may make the ascent of the Calanda from Ragatz, but this is more conveniently undertaken from Coire (see below). Another considerable expedition is the ascent of the *Piz Sol* (9,340′)—the highest of the Graue Hörner. A long day is required, and it is well to start rather before daylight.

The rly. from Ragatz to Coire crosses the Rhine, and at the same time enters the Canton Grisons by a long wooden bridge leading to *Maienfeld*, a small walled town of antique aspect, with a tower attributed to the Emperor Valentinian. This part of the valley of the Rhine abounds in remains of the feudal period. Every projecting rock is crowned by the ruins of some stronghold, and the surrounding scenery is very grand; but the effect is somewhat marred by the unsightly tract of bare gravel that covers the level floor of the valley. The Rhine, bearing down vast masses of detritus, constantly changes its course, and reduces the plain to a barren waste. The slopes of the hills between the Maienfeld and Malans produce excellent wine. The two finest qualities, called Completer and Herrschäftler, are said to rival the juice of Burgundy, but are seldom to be had pure at inns. About 3 m. beyond Maienfeld the rly. crosses the *Landquart* torrent, issuing from the Prättigau (§ 34, Rte. D) near the village of *Malans*. S. of the bridge is the Landquart station. To the NE. is seen the peak of the *Augstenberg* (7,801′), and to SE. the four towers of the Castle of *Marschlins*, one of the numerous seats of the ancient family of Salis, which has given many eminent men to the Grisons.

S. of the junction of the Landquart with the Rhine, both banks of the river lie in the Grisons; from that limit to the L. of Constance the l. bank belongs to the Canton St. Gall. The mountains on the rt. bank in this part of the

Rhine valley all assume a peculiar conical form. They are composed of the same problematical rock, called by Swiss geologists Grane Bündner Schiefer, and are separated by deep ravines out of which destructive torrents rush into the main valley.

The next station is *Zizers*, situated, like most villages in the valley, on a cone of dejection formed of detritus from a lateral valley, such being formerly the only spots secure from inundations of the Rhine. At Trimmis, half-way thence to Coire, a fine waterfall issues from the gorge of the *Maschänzer Tobel*; and a little farther is the opening of another wild ravine called *Scalära Tobel*. On the opposite bank of the Rhine are the ruins of the *Castle of Lichtenstein*, the cradle of the princely house of that name, and that of *Haldenstein*, one of the numerous Salis castles. Here the Vorderrhein valley begins to open to WSW., and the peaks Tumbif, Urlaun, and Russein come into view before reaching

Coire (Germ., Chur; Ital., Coira), the chief town of the Grisons and of E. Switzerland, 2,208 ft. above the sea. The chief Inns are Weisses Kreuz and Freieck, now united, in the middle of the town; zum Lukmanier, near the Rly. Station; zum Steinbock, at S. end of the town, with a fine view. These are about equal in accommodation; all are comfortable and clean. Next in rank is the Stern, good and reasonable; and after this the Löwe and Sonne.

Though containing but 7,000 inhabitants, Coire is a town of considerable importance, being the central point towards which converge most of the valleys of the east of Switzerland, as well as the alpine roads of the Splügen and Bernardino, leading into Italy, and on the line of the future Lukmanier Rly., which seems destined to be the main channel of communication between Central Europe and the Mediterranean. It is one of the most ancient episcopal sees N. of the Alps. The Cathedral, dedicated to St. Lucius, a British king (?) and martyr, who preached the gospel here in the third century, is mainly in the pointed style, with portions of much earlier buildings standing on Roman foundations. In the sacristy is an extremely interesting collection of ancient vestments, with fragments of silk of the 7th or 8th century, and early metal work.

The Bishop's palace is very picturesquely placed on a rock; within its walls are included two Roman towers, known by the names Marsöl and Spinöl. This and the Cathedral stand in the upper town, chiefly inhabited by R. Catholics; in the lower town the Protestant population predominates. In the Kantonschule near the Cathedral is a good collection of Natural History, chiefly formed by the late Prof. Theobald, who has done much to illustrate the geology and topography of his adopted canton. It includes the mineral collections of D. Placidus a Spescha, and the Swiss Herbarium of Moritzi. The Cantonal Library is remarkable as containing the fullest collection of the existing specimens of the Romansch language and literature. The Episcopal Archives contain documents that go back to the Carlovingian period.

It is foreign to the plan of this work to notice the history of the region which now forms the Canton Grisons (Germ., Graubünden; Ital., Grigioni): suffice it to say that, notwithstanding the valuable researches of the late M. von Moor and other local writers, there is still scope for investigation by a competent historical student among the extant documents preserved at Coire and elsewhere in this part of Switzerland. Since the period when this formed a portion of the Roman province of Rhætia, and was traversed by the important military roads of the Julier and the Septimer, leading to Curia Rhætorum (the present Coire), the history of this region abounds with dramatic incident, and presents a curious parallel to that of Switzerland,

from which this was held distinct until quite modern times. The formation of the three leagues which secured the independence of the people—the Gotteshaus Bund including the centre and S. of the present canton—the Grauer Bund in the Vorder Rhein and its tributary valleys — the Zehngerichte Bund in the E. of the canton—may have been indirectly promoted by the example of the Forest Cantons of Switzerland, but seems to have arisen directly from the fact that the heads of the Church and a few of the feudal chiefs here sided with the people in their struggle against intolerable oppression.

One of the causes that doubtless helped to maintain the separation between the Grisons people and their Swiss neighbours was the prevalence of the Romansch language, an offshoot from the Latin, of which some traces exist elsewhere in the alpine chain, but which is only here found in a comparatively pure condition. It is still the common language through two-thirds of the Grisons, and is subdivided into three dialects, so different as to be sometimes mutually unintelligible. Several newspapers, in one or other of these dialects, circulate in the canton; and a grammar and dictionary, by O. de Carisch, is to be purchased in Coire. In several of the main valleys there are communes inhabited by a German-speaking population, and that language is on the increase. In two or three valleys belonging to the canton, but lying on the S. side of the main chain, the people speak an Italian dialect resembling the Milanese.

The position of Coire is extremely fine, close to the junction of the *Plessur* torrent, issuing from the Sehanfigg valley (§ 35, Rte. E) to the E., with the *Rabiosa* descending from the S., and near the point where their united streams flow into the Rhine at the foot of the Calanda. Of the shorter walks in the neighbourhood of the town, those to the Rosenhügel, the Felsenkeller, the Lürlibad and Chapel of St. Lucius, and the Scalära Tobel (mentioned above), are especially recommended to strangers.

From the slopes outside the town, the entire length of the Vorderrhein valley is visible in clear weather. In the extreme distance is seen the Badus, or Sixmaduna, which feeds the principal source of the stream. To the rt. is the range of the Crispalt, then a part of the Oberalpstock, and then a snowy pyramid, often pointed out as the Tödi, in reality the Brigelser Horn, or Piz Tumbif. Lower ranges conceal the other intermediate peaks of the Tödi chain, whose eastern extremity, the massive promontory of the Calanda (9,213)′), rises immediately opposite, on the l. bank of the Rhine.

The ascent of this peak is for the mountaineer the most interesting excursion to be made from Coire; but whichever route be taken, it is a laborious expedition, involving a climb of nearly 7,500 ft. A guide should be taken.

The view is admirable, and the mountain very interesting to the naturalist and the geologist, presenting, as it does, a nearly complete section of the sedimentary formations which constitute the greater part of the Tödi chain, in the following ascending series: — 1. Verrucano; 2. Rauhwacke (Trias); 3. Röthikalk (Lower Lias); 4. Calcareous slates of various colours, containing magnetic iron and gold (Upper Lias and Lower Jurassic); 5. Calcareous slates with *Belemnites hastatus* (Lower Oxfordian and Kelloway rock ?); 6. Dolomite (Middle Jurassic); 7. Crystalline limestone, worked as marble (Upper Jurassic); 8. Neocomian, with *Ostrea macroptera*, may be seen in the Felsbergerhorn, at the Weiber Sattel, and in the rocks by Haldenstein; 9. Cretaceous limestones (equivalents of Gault and Upper Chalk), little developed, but traceable between Untervatz and Mastrils; 10. Nummulitic limestone and Flysch—well seen in ascending from Ragatz to the convent of Pfäfers.

Among other rare plants, *Ranunculus Traunfellneri*, *Gentiana tenella*, and *Androsace helvetica* are found near the summit. Lower down are *Viola pinnata*, *Saxifraga mutata*, *Daphne alpina*, *Limodorum abortivum*, and *Lilium bulbiferum*.

The ascent from Coire is commonly made from Haldenstein, and it is usual to pass the night at some châlets about 2 hrs. below the summit.

'In ascending from Ragatz, rough accommodation for the night may be had at the châlets called Obern Maiensäss.'—[M.]

A much less laborious excursion, said to offer a still finer panoramic view than that from the Calanda, is the ascent of the *Stätzerhorn* (8,458′). This summit lies nearly due S. of Coire, W. of the road leading by Tiefenkasten to the Julier and Albula Passes, and is equidistant from the four principal groups of the Grisons Alps —the Tödi, Adula, Silvretta, and Bernina. The way lies by the carriage-road as far as Parpan (§ 35, Rte. A), about 8½ m. from Coire. Thence the ascent is continued on foot or on horseback as far as the châlets of Sporz. The summit is reached in 3 hrs. from Parpan, and is quite within the powers of many ladies, to whom this may be recommended as one of the finest points of view in this part of the Alps.

There is a diligence daily from Coire to Dissentis, in about 9 hrs.

The pedestrian bound for the Vorder Rhein, after leaving Coire, may best cross the ricketty wooden bridge over the Rhine to *Felsberg*, avoiding Reichenau and the high road. He may probably have ocular or audible evidence of the manner in which this portion of the Calanda is fast crumbling away. Owing to the rapid disintegration of a slaty limestone which underlies the dolomite that forms a large portion of the mountain, the latter breaks away in huge masses, which have over and over again threatened with destruction the village of Felsberg. Twenty years ago large sums were collected to enable the inhabitants to remove from the jaws of danger. New houses were built, but most of the natives continue to live where they did before. After passing opposite to the village of *Ems*, on the rt. bank, the regular track mounts through an oak wood, and then descends to Tamins. A shorter foot-track to Reichenau keeps near to the river, passing in one place along a steep face of slippery débris. At *Tamins* is a fine view from the church, perched on a mass of fallen blocks of dolomite. Hence mounts the track to the Kunkels Pass (Rte. N.) The ascent of the *Piz Tschep* (*La Morra*), (9,656′), an outlyer of the Ringelspitz, may be made in one long day from here. About Tamins many interesting plants have been found — e. g., *Anemone montana*, *Ononis rotundifolia*, *Oxytropis pilosa*, *Astragalus monspessulanus*, *Tomasinia verticillaris*, *Leontodon incanus*, and *Echinospermum deflexum*.

At the junction of the two Rhine streams, the Vorder and Hinter Rhein, half a mile from Tamins, stands *Reichenau*, more fully noticed in § 31, Rte. A. (Inn : Adler, good and moderate.) Here the traveller enters the valley of the *Vorder Rhein*, called by the Swiss Bündner Oberland, and in Romansch Surselva. This branch of the famous Rhine stream flows in a nearly direct course for about 45 m. from the Oberalp Pass to the Castle of Haldenstein, below Coire. A straight line between these points is scarcely anywhere a mile distant from the bed of the stream. The scenery is, however, by no means of the monotonous complexion that usually characterises a valley of this form. Narrow rocky defiles, alternating with open basins enlivened by villages and farmhouses, with numerous lateral valleys and alpine glens opening on either hand views of the snowy peaks that enclose the main valley, combine all the elements of picturesque scenery. The valley offers much interesting occupation to the naturalist, but especially to

the geologist and mineralogist. The mountains surrounding the head of the valley are composed of crystalline rocks presenting great variety of structure. To these, as we travel eastward, succeed verrucano, and secondary formations of lias and Jura limestones, capped at many points by cretaceous and eocene strata.

As in other parts of the Grisons, the Romansch language prevails in the Vorderrhein valley, and in some of the remoter villages it is difficult to find anyone knowing German. This scarcely applies to Inns, where German is generally spoken. The names of places are often different, and on this account both the German and Romansch names are in many cases given below.

The valleys on the S. side of the Vorder Rhein are described in § 31. Two roads lead from Reichenau to Ilanz. The old road on the rt. bank, by *Bonaduz*, *Versam*, *Carrera*, *Valendas*, and *Kästris*, is rougher, but pedestrians approaching from Thusis should take that side, reaching Bonaduz by foot-path from Rhäzuns. The frequented new road by the l. bank mounts from Reichenau to Tamins, and then, turning to the l., is carried at a considerable height above the river to *Trins*, 1 hr. from Reichenau. The lower part of the Vorderrhein valley is crowded with castles, once inhabited by the predatory nobles of Rhætia, now for the most part gone to ruin. One of the most ancient was *Hohentrins*, said to have been founded A.D. 680. In mounting the hill on which stands the castle, the road passes the traces of a far more remote antiquity in the remains of terraces whose origin is questioned by geologists. Beyond Trins two deep lateral glens open out on the N. side of the main valley. The first of these is the *Bargis*, or *Bargias Thal*; the next, the *Segnes Thal*, through which lies the track to the Segnes Pass (Rte. I). The torrents descending from these unite before joining the Rhine, and have each of them excavated a deep and wide ravine, to avoid which the road makes a considerable sweep to the rt., passing through the picturesque woodland scenery of the *Flimserwald*, here and there opening views of the snowy range to the N., and varied by small lakes well stocked with fish. [The Bargis and Segnes glens are separated by a massive mountain promontory, steep on every side, called the *Flimserstein*. The summit, formed of nummulitic limestone, is a long sloping plateau, rising from about 6,500 ft. at its southern extremity to over 8,000ft. Many rare plants grow here, of which *Dianthus glacialis*, *Saxifraga biflora*, *Campanula cenisia*, *Rumex nivalis*, and *Orchis Traunsteineri*, deserve special mention. The *Flimserstein* may be ascended without difficulty by a path carried up its eastern face from the Bargis Thal, and from its summit the track to the Segnes Pass (Rte. I) may be joined near the top. A guide is requisite.]

The village of *Flims* (3,616′), at the SW. base of the Flimserstein, about 1¼ hr. from Trins, has two country inns (Adler, pretty good; Post). Rather better quarters are found at the Waldhäuser, a roadside inn, about a mile beyond the village, often visited in summer by pleasure-seekers from Coire. Near at hand is the *Cauma See*, a pretty lake in the midst of the pine-forest on the l. of the road. Pedestrians may take a path from Trins that keeps near the Rhine, avoiding Flims and Laax; but little, if any, time is saved by it. At *Laax* the road crosses a ravine excavated by a glacier torrent issuing from the snowfields of the Vorab, through the *Pleun Thal*. From hence the road descends towards the Rhine. The valley opens out, and the little town of Ilanz is seen at the junction of the main stream with the Glenner issuing from the Lugnetz Thal (§ 31). On the opposite, or rt. bank, stands Kästris, and above it, on a terrace of the Signina Stock, the hamlet of *Seewis* (2,838′),

commanding one of the finest views in the valley. In 2½ hrs. from Flims, the traveller reaches

Ilanz (Rom., *Glion*) (Inns: Oberalp, good; Lukmanier, pretty good), ancient, poor, and dilapidated, but claiming to rank as the first city on the Rhine, 2,356 ft. above the sea, and offering good head-quarters for excursions into the Lugnetz Thal and its tributaries; the old Rathhaus is worth seeing—fine view from the church of St. Martin above the town. For those who wish, in a single excursion, to gain a general acquaintance with the Alps that enclose the Vorder Rhein, there is none so much to be recommended as the ascent of the *Piz Mundaun* (6,775′), immediately over Ilanz, on the rt. bank of the stream. This is the NE. extremity of the range separating the Val Tenji from the Vrin Thal, or western branch of the Lugnetz Thal. The summit, about 4,500 ft. above Ilanz, being nearly isolated, commands a complete view of the entire chain of the Tödi, the Vorderrheinthal and a great portion of the Adula range (§ 31), with more distant peaks, including the Galenstock to the W., and in the opposite direction the Rhætikon and Silvretta Alps, forming the eastern boundary of Switzerland. Having passed the church of St. Martin, it is possible to ascend nearly in a direct line to the top; but there is a much easier way, practicable for a horse accustomed to mountain work, bearing to the left by the hamlet of Luwis, and thence over gently-sloping pastures to the chapel of St. Carlo. There is a tolerable mountain inn about ¾ hr. below the summit which is easily reached in 3½ hrs. from Ilanz. The view may be compared with that from the Piz Languard, in the Engadine. The Bernina is, indeed, a far more imposing mass than the Adula; but, on the other hand, the chain of the Tödi is higher, bolder, and more varied than the ranges of the Albula and Selvretta on the N. side of the Engadine. The valleys overlooked from the Piz Mundaun, lying some 3,000 ft. lower than the upper valley of the Inn, are richly wooded with deciduous trees as well as pines; whereas bare, treeless slopes of alpine pasture give a somewhat monotonous character to the near view from the Piz Languard. From the chapel of St. Carlo the traveller may descend direct to the Baths of Peiden (§ 31), or he may vary his route by striking down the N. side of the mountain from the top to Obersaxen on the rt. bank of the Rhine, from whence there is a track leading either up the valley to Trons, or back to Ilanz.

From Ilanz, the pedestrian may choose between the high road and the track just mentioned by Obersaxen. The latter involves many ascents and descents, but the scenery is much more interesting, and it is more shaded from the sun. *Obersaxen* is a collection of scattered hamlets, on a terrace of limestone in the midst of the grey slates, on the mountain side, more than 1,000 ft. above the river. At *Meyerhof*, the largest of these hamlets, is a very decent country Inn, from whence an excursion may be made up the *Val Gronda*, through which the *Piz Miezdi* (9,258′), one of the peaks of the Terri range, may be ascended. The high road is rejoined at Tavanasa.

Following the high road from Ilanz by the l. bank of the Rhine, a powerful torrent, formed by the confluence of three streams — Flum, Ladral, and Schmue—is traversed after passing the village of *Ruis*, 1 hr. from Ilanz. The latter of these streams descends from the Panixer Pass (Rte. H), while the Flum leads by Brigels to the Kisten Pass (Rte. G). After passing through a narrow defile which the Rhine has excavated at a great depth below the original bed of the valley, the road crosses to the rt. bank at *Tavanasa* (2,707′), near which the Ulatschbach, issuing from Val Gronda, forms a pretty waterfall. The valley again closes, and for 3 m. the road passes through a defile, at the end of which a bridge

leads back to the l. bank, and in 4 hrs. from Ilanz reaches

Trons (Inns: Krone, not recommended; H. z. Tödi). Just before entering the village is the chapel of St. Anne, and by its side the shattered trunk of an old sycamore-tree. They mark a spot which should be venerated by every lover of liberty; for history records no political event achieved by purer means, or for nobler ends, than the formation of the first Grisons League. Incited by Peter von Pontaningen, abbot of Dissentis, several of the Rhætian nobility resolved to cast their lot with the people, in the effort to curb the excesses of feudal tyranny and the license of armed freebooters. Under the sycamore tree, which is a surviving witness to the transaction, they met the deputies of the peasants from each district, in March 1424, and there swore the oath administered by Abbot Peter, pledging themselves to 'hold together as good friends and true confederates, ready to risk life and goods, in order to guard the right, the public peace, free roads, and free commerce; to protect every member of the bund, lay or cleric, noble or simple, rich or poor, in his rights and possessions; to maintain each man his rights by law, and not by the strong hand; to withstand all lawless violence, and to punish the unruly, who will not obey the sentence of the law.' Thus was formed the Grey League (Grauer-Bund), to which were afterwards united the Gotteshaus Bund and the Zehngerichte Bund, making up nearly the territory of the present Canton of Graubünden.

Trons (2,820′) lies close to the junction with the Rhine of the *Ferrera* torrent, which descends through a wild ravine from the *Puntaiglas Glacier*—well worth a visit.

[Following up the course of the stream, you reach some abandoned mines of magnetic iron, formerly worked in a green chloritic slate; then mounting through the ravine, the path disappears amidst a huge mass of débris, beneath which the torrent forces its way. Above are seen some projecting ice-blocks, and in the background the massive Piz Urlaun. It is a stiff climb to mount from the ravine to the Puntaiglas Alp above it, which may be reached by a much easier but less interesting path from Trons. The Alp is a green pasture enclosed by precipices, the highest and steepest of the entire chain, belonging to the *Piz Ner* (10,072′), a grand inaccessible-looking peak. The geology of this glen is very interesting. In the bottom of the ravine is a granite with very large felspar crystals, which may be traced in erratic blocks all the way to the Lake of Constance. With this is associated a syenite, which passes into diorite. Next appears a talcose quartz rock (*verrucano*), over which lies the usual series of Jurassic, cretaceous and nummulitic strata, while over the last a quartz rock, similar to that below, is superposed. Copper, antimony, and gold have been found in this glen, which is the resort of chamois, marmots, eagles, and occasionally of the Lämmer-geyer. The ascent of the *Piz Urlaun* (11,063′), the third in height of the peaks of the Tödi chain, was made from hence in 1793 by Placidus a Spescha.

He started from Trons with three companions and a porter. Having reached the head of the Ferrera Thal in 2 hrs., they ascended without difficulty the main stream of the Puntaiglas glacier to its head, where it receives several secondary glaciers that descend through as many lateral channels. Avoiding the first of these, on the left hand, which leads up to inaccessible rocks, they mounted on the l. by a much-crevassed branch of the upper glacier to a snow-covered slope leading to limestone rocks, which were climbed through an accessible cleft, and the first step in the ascent gained. A long slope of débris led from thence in 1½ or 2 hrs. to the second stage. All Spescha's companions stopped short in a cleft at the summit

of this slope, and he ascended alone to the rounded snow-capped summit, reached in 1½ hr. Nearly the same course was taken in 1865 by Mr. Tuckett, with three friends and two guides. They descended in a SW. direction to the E. branch of the Gliens Gl., crossed this and the W. branch to the moraine on the rt. bank, and reached the lower Russein Alp in 3½ hrs. from the top.

About one league on the high road beyond Trons is *Somvix*, a large village; and opposite to it, on the rt. bank, *Surrhein*, at the opening of the Somvixer Thal, or Val Tenji (§ 31). The distance from hence to Dissentis is about a league and a half, but midway a formidable obstacle has to be overcome. The torrent issuing from the Val Russein, in which are united the glacier streams from all the highest peaks of the Tödi group, has cut a deep ravine, through which it makes its way to join the Rhine. Formerly the road made a wide détour to avoid the difficulty, but the new road is carried at a level across a skilfully-constructed wooden bridge, and about 2 m. further on reaches

Dissentis (Inns: H. Condrau, or Krone, clean and comfortable; H. Condrau, or Post, opposite the last; Adler). The famous Benedictine Abbey which gave its name to the village is now converted into a cantonal school. It was founded in 614 by St. Placidus, an early Christian convert and martyr, on the spot where his master, St. Sigisbert, an Irish (or Scotch?) monk, who first preached the gospel in this region, had built himself a hermitage. For historical details, see Theobald's work, already cited. The present building is modern, with no remains of earlier times. The original monastery, with its invaluable library, was destroyed by the French in 1799; and that which rose in its place, burned by an accidental fire in 1846. It stands at a height of 3,835 ft., upon a plateau overlooking the main valley, and just opposite to the confluence of the Medelser Thal (or Middle Rhine) with the Vorder Rhine. Immediately below the abbey is the small village, surrounded by corn-fields and fruit-trees. The mildness of the climate—for the snow often disappears here in spring, while it still lies deep at Coire—is attributed to the influence of the S. wind (föhn) passing over the comparatively low barrier of the Lukmanier Pass, at the head of the Medelser Thal. This is an excellent place for head-quarters, and several weeks may be well spent by a mountaineer in exploring the neighbouring peaks and glaciers. Here meet the new road over the Oberalp Pass (next Rte.), the paths from the Lukmanier, the Uomo Pass (§ 30), the Kreutzli Pass (Rte. E), and that of the Sand Grat (Rte. F); besides others less frequented, hereafter noted. The chief explorer of this district was a monk of the neighbouring abbey, named Placidus a Spescha, born 1752, of whose life and doings Theobald has given an interesting sketch. With the single exception of the Tödi, where his repeated attempts—the last at 72 years of age—were foiled by various accidents, he seems to have reached all the highest peaks of the neighbouring Alps. The following excursions are partly extracted from his manuscripts, published by Theobald:—

Piz Muraun.—This peak rises on the S. side of the Rhine, opposite the opening of the Val Russein. The summit (9,511′) may be reached from the N. side, but more easily from the SW., passing by the Soliva Alp. The view is very similar to that from the Piz Mundaun over Ilanz; but the Tödi and Oberalp groups, and the peaks at the head of the Medelser Thal, being nearer, are seen to greater advantage.

Medelser Glacier.—A very considerable glacier, whose existence would not be suspected by a traveller passing through the Medelser Thal (§ 30, Rte. F), rests between the peaks that enclose the valley on the E. side. It is easily reached from the hamlet of *Fuorns*, where a torrent from the glacier descends to join the Middle Rhine;

or from *Curaglia*, lower down in the valley, from whence a path mounts to the *Plattas Alp*, close to the glacier. This is an easy and interesting day's walk.

Val Cristallina — Piz Puzata. — A more laborious excursion through fine scenery of the wild and savage character may be made from Dissentis to the Val Cristallina, either penetrating to the end of its E. branch, called Val Ufiern, and mounting to the lakes that rest on the pass leading to Campo; or else attempting the ascent of the *Piz Cristallina* (10,344′), or the *Piz Puzata* (10,262′). The latter was climbed by Spescha without encountering any serious obstacle. It is possible to descend from the summit to *Platta*, and so shorten considerably the return to Dissentis (see § 30, Rte. F).

Stockgron. — Reached from Val Russein (see Rte. F).

Piz Urlaun.—Seems to be accessible from the Gliems Thal more easily than from Trons (see above).

Piz Cotschen, or *Tyietschen.* — Ascended by Spescha; he passed the night with his servant at the Runs Alp (6,883′) N. of Dissentis. Next morning they ascended through the Laiserein Thal to the crest of the ridge dividing Grisons from Uri. They here overlooked the great snow-plateau of the Brunni gletscher, which they traversed, and from thence reached the summit (10,925′) by a steep ascent along its eastern ridge. They had much difficulty in crossing a wide crevasse (*bergschrund*), and were nearly carried away by an avalanche of fresh snow on the steepest part of the peak. In two subsequent ascents from the SW. side, Spescha was forced to take the same course for ascending the highest peak. The view extends from Mont Blanc to the Tyrol.

A subsequent ascent by the late G. Hoffmann is recounted in 'Berg- und Gletscher-Fahrten.' With his guide, Maria Trösch of Silenen, near Amsteg, he reached the Kreuzli Pass at 6.15 AM. From thence, keeping nearly at a level along the slopes of the Weitenalpstock, and then crossing the head of the Strim Glacier, he attained in $2\frac{1}{4}$ hrs. the foot of the peak. The climb up a steep *couloir* of snow took 4 hrs. There are two peaks nearly of the same height, but separated by a deep chasm; and a third lies to the S. Upon the middle and highest they erected a stone man. In 1864 Mr. Sowerby reached the top in $5\frac{1}{2}$ hrs. from Sedrun by an easier way than either of those above described. From the foot of the Strim Glacier he mounted to the rt. up rocky slopes, and then over névé till he reached the ridge dividing that glacier from the Brunni Gl. From thence the peak is easily gained. Descending by the eastern ridge to the Brunni Gl. the traveller may reach the inn at Walderbalm in the Maderanerthal in 5 hrs.

The name Oberalpstock given to this peak by some writers is by others applied to the entire group of which it is the highest point.

Piz Ault.—A southern outlyer of the Cotschen, with two peaks — the Piz Ault proper (9,951′), and the *Crap Alv* (9,784′). Either may be reached in one day from Dissentis, ascending through the Acletta valley, which opens near the village. From thence the way is up a ravine called Magriel. To attain the higher peak, you bear to the rt.; while by keeping to the l. you may gain the summit of the Crap Alv. Monte Rosa is visible from the latter; Mont Blanc, in addition, is included in the panorama from the Piz Ault. Both are composed of gneiss.

Even those who do not attempt the ascent of the Tödi or the Stockgron, nor the glacier passes leading from the Val Russein across the main chain, should not fail to make at least one excursion to the head of that valley, which is described in Rte. F.

A very fine view of the main valley, extending to Coire, and of the glaciers of the Medelsergebirg, is obtained from the chapel of Acletta, $\frac{1}{2}$ hr.'s walk N. of Dissentis.

J. M. Schnoler and Placidus Durgin

are recommended as guides. The charge for horses is high—'11 fr. a day for each horse, with 1 fr. a day for the guide. If required for several days, a less price will be taken.'—[M.]

Route D.

DISSENTIS TO ANDERMATT BY THE OBERALP PASS—SOURCES OF THE VORDERRHEIN.

	Hours' walking	Eng. miles
Sedrun	2	6
Oberalp Pass	2½	6
Andermatt	2¾	6½
	7¼	18½

The new road, completed in 1865, between Dissentis and Andermatt, taken in connection with the new Furca road between Andermatt and Brieg, for the first time opened direct communication by road between the east and west of Switzerland. Diligences now ply daily in summer between Coire and Andermatt, taking rather more than 13 hrs. and halting for the mid-day meal at Trons. A carriage with two horses, costing from 100 to 120 fr., may be hired at Coire or Andermatt to make the journey in two days. Pedestrians, who usually prefer what is called the summer path, take 7 hrs. from Dissentis to Andermatt, but 6 hrs. suffice for an active walker. The so-called winter path has been superseded by the new road.

Above Dissentis the Vorderrhein valley assumes a more alpine character, and is called *Tavetscher Thal*, renowned for its honey, cheese, and for rare minerals. Among other rare plants found here, *Linnæa borealis* and *Oxytropis uralensis* may be noted. The char-road ascends rather steeply, and, after crossing at Segnas a torrent that issues from a ravine between the Culm da Vi and the Crap Alv, reaches *Mompè Tavetsch* (4,583′), about 4 m. from Dissentis. Here opens, on the S. side of the valley the *Val Pazzola*, or *V. Terms*, through which the Terma torrent is poured into the Rhine from the *Poras Glacier*, backed by the *Piz Ganneretsch* (9,984′), called also Catseharauls, but this latter name has been given to other neighbouring peaks. Amid very picturesque scenery the road, after passing Bugney, terminates at

Sedrun (a good country Inn: Krone —clean, and reasonable charges), the chief place in the Tavetscher Thal (4,587′) at the outlet of the *Drun*, a destructive torrent which carries down a vast amount of débris. The chloritic slate through which its channel is cut is rich in rare minerals and fine quartz crystals. On the rt. bank of the Rhine, a little below Sedrun, is the opening of the *Nalpser Thal*, a fine wild glen, well deserving a visit. The path to it crosses the Rhine at Sedrun, and mounts by the hamlet of Surrhein to the angle of the mountain lying between the Rhine and the Nalpsa; then entering the glen, passes Nacla, the châlets of Perdatsch, and reaches those of *Nalps* (5,990′). At the head of the glen is a pass rarely used, called the *Bolkata de Nalps*, leading to Sta. Maria, in the Medelser Thal.

Pursuing the road from Sedrun to the Oberalp Pass, the traveller soon reaches the *Strima* torrent, descending from the *Strim Thal*, up which lies the way to the Kreuzli Pass (Rte. E). The upper part of the Tavetscher Thal, lying amidst crystalline rocks which show many traces of ancient glaciers, is, in winter peculiarly exposed to avalanches. *Ruäras*, the next village (Inn: Oberalp, good), has been twice in great part destroyed, and on one occasion 237 head of cattle and 108 human beings were buried in the snow. Of the latter 44 were ultimately saved. Two glens, descending from the Crispalt range, join their waters here. Through one of them, the *Val Giuf*, is the way to the *Piz Giuf* (10,164′), the highest summit of that range, which may be ascended without any serious difficulty.

From Ruäras two different paths lead to the pass, or rather to the Ober-

alp See, as they do not cross the ridge at the same point. The rt.-hand way, or summer path, is shorter, but steeper and higher. The new road, following pretty nearly the old winter track, half an hour longer, but rather less steep, keeps near the Vorder Rhein, here reduced to a mountain torrent, and crosses the ridge at its lowest point.

To follow the summer path, you ascend from Ruäras over wooded slopes, passing round a buttress of the Crispalt above the hamlet of *Crispausa*; having rounded this, you traverse the pastures of Milez and Scharina, descending a little towards the upland glen, called *Val Tiarms* (Germ., *Gämmerthal*) (not to be confounded with the Val Terms near Dissentis), along whose torrent you ascend for a short distance only, and then bear away to the l., over the alpine pasture which leads up to a depression in the ridge between the lofty *Piz da Tiarms* (9,564′) on the rt. hand, and the much lower point of Calmot to the l. From the summit—a grassy ridge, 7,067 ft. in height—locally called *Passo da Tiarms*—you descend by a gentle slope, and soon perceive the waters of the *Oberalp See*, a narrow sheet of water nearly a mile long, enclosed by rocky heights, and, although 6,663 ft. above the sea, well stocked with trout. To the W., on a higher shelf of the mountain, is a wild tarn, called the *Lauter See*, 1,014 ft. higher than the Oberalp See.

At the E. end of the lake the path rejoins the new road. This follows the l. bank of the Vorder Rhein from Ruäras to *Selva*, about 2 m. The forest which gave its name to this hamlet has been in great part cut down, and the natives have since been frightfully exposed to avalanches. 1 m. farther is *Ciamut* (new inn at the Post station), or Tschiamut, the last hamlet (5,380′), where rye, barley, flax, and beans are still grown at an unusual elevation. The Rhine is here joined by two torrents: that from the Val Tiarms, sometimes called *Gämmerrhein*, comes from the N, while in the opposite direction the more powerful Cornärabach, or *Cornärarhein*, descends from the glacier at the head of the wild and picturesque *Val Cornära*. The pastures of this glen belong to the people of Val Leventina, and they are accustomed to drive their cattle in summer by a difficult pass partly over glacier, across the lofty ridge which separates the Cornärathal from the Val Canaria (§ 30).

To reach the Oberalp Pass from Ciamut, the road crosses the Gämmerrhein, and follows the l. bank of the main stream, till some châlets are reached, where this divides into three branches. Leaving on the l. hand the others, which lead to the proper sources of the Rhine, the road follows for a while the northern branch, through the little alpine glen of *Surpalix*, and then mounts by long easy zigzags to the crest of the *Oberalp Pass* (6,732′), only a few ft. above the level of the lake where the foot-path joins it. Owing to the boggy nature of the ground, pedestrians do well to keep to the road, which is carried along the N. side of the lake. This wild place was the scene of a bloody engagement between the French and the Austrians in 1799, which resulted in the retreat of the latter, and the occupation by the French of the basin of Andermatt. From the W. end of the lake it is an easy descent of 45 m. to the Oberalp châlets, where the valley widens: immediately below Andermatt is seen, and beyond it the dreary Urseren Thal, backed by the Furca Pass, on which the new inn is distinctly visible. The new road winds to the rt.; the old rough track goes direct to Andermatt (§ 30) in 1 hr. The pedestrian may avoid it, and find his way through the meadows on either side.

In fine weather there is not the slightest difficulty in keeping to the path here described; but when clouds hang over the pass, a lone traveller is liable to be misled by the numerous cattle tracks that cross each other in every direction. In descending by the summer track from the pass towards Dissentis, beware of attempting to follow the

stream of V. Tiarms down to its junction with the Rhine. The true path keeps at a high level till it approaches Ruäras.

[We have left by the way the sources of the Vorder Rhein, which may be visited on the way to Andermatt, or furnish an interesting excursion from Sedrun. Although properly belonging to the group of the St. Gothard Alps (§ 30), they are more conveniently described here. Returning to the above-mentioned châlets, about 1 m. above Ciamut, we there find three streams unite their waters to form this branch of the Rhine. The N. or Surpalix branch leads to the Oberalp Pass; the middle stream comes from the *Piz Nurschallas;* the S. and principal branch is considered the true origin of the river. It is formed by the union of the streams from two lakes, the *Pali Dulca* to the S., and the *Toma See* to the W. The latter is a small oval lake or tarn, about 400 paces long, 7,690 ft. above the sea, lying on a shelf on the E. face of the *Badus* or *Six Maduna.* The steep rocks overhanging the lake are inaccessible, but the peak (9,616′) is easily reached from the N. side, where the ridge connecting it with the *Piz Toma* sinks into a snow-filled hollow, which may be reached from the lake. Although not the highest point of that eastern portion of the St. Gothard range which is interposed between the valleys of the Vorder and Mittel Rhein (see § 30), the Badus, because of its central position, probably commands the finest view. To the E. the eye stretches along the valley to the town of Coire, where, at a distance of 45 m., several of the public buildings may be distinguished, while the background is filled by the still more distant range of the Rhætikon (§ 34). SE. are the imposing masses of the Medelsergebirge, and behind these some of the peaks of the Adula (§ 31). To the S. is the head of the Cornära Thal with the glaciers surrounding the *Piz Ravescha* (9,875′), and beyond these the mountains of Tessin. W. are the central peaks of the St. Gothard, with Monte Rosa, and even Mont Blanc (more than 100 m. distant), in the background; then the Bernese Alps, and near at hand the Unteralp Thal, leading to Andermatt. It is easy to descend to that place by the W. side of the mountain. A rather more difficult (?) and much more interesting route is to descend by the SW. side of the peak into the head of the Cornära Thal, amidst very grand scenery. From thence Ciamut is reached in 2 hrs., and Sedrun 1½ hr. farther.]

Route E.

DISSENTIS TO AMSTEG — KREUZLI PASS.

	Stunden	Eng. miles
Sedrun . . .	2	6
Kreuzli Pass . .	2½	6½
Etzliboden . .	3	7½
Amsteg . . .	2	5
	9½	25

The *Kreuzli* (called in Grisons *Hrixli*) *Pass* is rough and rather fatiguing, but nowhere difficult. In mounting from Amsteg there is some risk of losing the way, and a guide may be necessary, especially in cloudy weather.

The char-road from Dissentis to Sedrun is described in the last Route. A short distance beyond Sedrun is the opening of the *Strim Thal*—a wild narrow glen, of dreary ruinous aspect, from the masses of rock that have fallen into it from the mountains on either hand, especially the *Culm da Vi* on the E. side. To reach the upper end, where it divides into several ravines that run up to the glaciers of the Oberalpstock, is a long hour's walk by a rough path. From thence the way to the pass is up the rocks on the l. hand, or W. side. The ascent is steep but not difficult, over rocks which, in places, show evidence of the former passage of a glacier. When these are

surmounted, the pass (7,710′) is soon attained in about 3 hrs.' steady walking from Sedrun. From the summit there is a fine view of the Piz Cotschen, the highest of the Oberalpstock group, accessible, though with difficulty, from this side (see Rte. C); the track leading to Amsteg, which is not well marked, descends in a westerly direction, at first gently, through a sort of hollow strewn with scattered rocks and patches of snow, between the *Weitenalpstock* (9,875′), an outlyer of Piz Cotschen on the N. side, and the Kreuzlistock on the S., and then more rapidly till it reaches some châlets standing in a little marshy plain near to the main stream of the *Etzli Thal*. This flows from an irregular amphitheatre formed by the rocks of the Bristenstock, the *Piz Giuf* (called on the Uri side Muttenalpstock ?), the Mutsch, and the Kreuzlistock. In the centre is a small lake, the *Spillauer See*, well worth a visit to a lover of grand scenery. It may be reached in about 2 hrs. from the above-mentioned châlets. In 3½ hrs. more, Mr. Sowerby ascended *Piz Ner* (10,036′), the nearest rival of Piz Giuf, and descended in 3 hrs. to Sedrun. From the same châlets the ascent of the *Kreuzlistock* may be easily made in 3 hrs. Being little over 9,000 ft. in height, the view is limited by the surrounding peaks. The N. base of this peak is a well-known locality for rare minerals. In 1866, Mr. Sowerby with several companions, effected a variation on the ordinary route by crossing the ridge between Piz Cotschen and the Weitenalpstock, and descending to the Etzlithal through the Sellenen Tobel.

The path to Amsteg follows the torrent of the Etzli Thal nearly due N., along the l. bank, till it reaches a place called *Etzliboden*, where a few châlets stand on either side of the stream. Trees now begin to appear; the path keeps near to the stream, which is crossed three times, and a rather steep descent leads down into the Maderaner Thal, running from E. to W. at right angles to the Etzli Thal. From the junction of the two valleys the track descends to Amsteg (§ 30, Rte. A), (about half an hour's steady walking), passing on the way the village of *Bristen*.

Route F.

DISSENTIS TO STACHELBERG, BY THE SAND GRAT — ASCENT OF THE STOCKGRON.

From 11½ to 12 hrs., exclusive of halts.

To a moderately-practised mountaineer this pass does not deserve the epithets 'difficult and dangerous' that have been sometimes applied to it, but it is long and somewhat fatiguing. Many travellers who have crossed it from the N. side have passed the night at the Upper Sand Alp, and have thus reduced the expedition to a very moderate day's work. Subject to the remarks in Rte. A, future travellers will probably avail themselves of the new Inn, called Tödi Wirthschaft, below the Pantenbrücke, and thus shorten the day's walk by at least 5 m.

It is not advisable to undertake the pass without a guide, but a mountaineer coming from Dissentis may send back his guide after crossing the pass and reaching the lower end of the Sand Glacier.

As mentioned in Rte. C, the high road from Trons crosses the torrent issuing from *Val Russein*, about two miles below Dissentis. This powerful torrent is the joint produce of the glaciers lying on the southern flank of the peaks of the Tödi group, which pour down their separate streams through several converging glens, called by the collective name *Russein Thäler*. The lower part of the Russein Thal, also called *Val Barcuns*, opens near the bridge through a deep ravine cut by the torrent through grey hornblende rock. The track mounts steeply by the l. bank of the stream amid rocks and pine-forest, then through meadows, and past scattered châlets,

where the valley begins to open out. Amidst very fine views of the neighbouring peaks, it reaches a point at which it divides. The W. branch is called *Val Cavrein*, and this again forks at the châlets of Cavrein into two branches — the Val Cavrein proper, running NW. up to the Tschingel Glacier and *Piz Cambrial*—and *Val Cavardiras*, leading SW. over a glacier pass, to the *Brunnigletscher*, and so to the inn at Waldibalm in the Maderaner Thal, reached in 9 hrs. from the lower châlets in Val Russein. The Val Cavardiras is separated from the main valley of the Rhine by a steep rocky ridge, extending E. from the *Piz Cavardiras* (9,728′). The glen may be reached from Dissentis by going over the Acletta Pass to the Brunni Glacier, and crossing to the Cavardiras Gl. by the pass mentioned above. This is a pleasant variation on the common track from Dissentis to the Russein Alp.

A massive snow-capped range divides the Val Cavrein from the Russein Thal. The latter receives a considerable tributary on the E. side through the *Val Gliems*, from the *Gliems Glacier*, lying on the SW. flank of the Piz Urlaun. Through a gap in the ridge which bounds it to the eastward, the Gliems Glacier is connected with the Puntaiglas Glacier (see Rte. C.) The châlets and pastures at the junction of the Gliems Thal are the Lower Russein Alp (5,895′?). Following from that point the l. bank of the main torrent, the track ascends rather steeply, nearly due N, to the last solitary hut. A short glen, called *Val Pintga*, descends from the W. side of the *Culm Tgietschen* (not to be confounded with the higher Piz Tgietschen, NW. of Dissentis), while the main glen, keeping to the E. side of that peak, is closed by the ice-covered ridge extending from it to the NE. A steep but not difficult track mounts over rock and slopes of débris to the *Sand Grat Pass*, 9138 ft. in height, about 6 hrs. from Dissentis, midway between the *Klein Tödi* (10,072′) and the *Catscharauls*.

The view from the summit is very fine. To the W. is seen a part of the Clariden firn, the greatest snow-field in this part of the Alps. On the N. side is the Sand Glacier, over which lies the way to the valley of the Linth. E. is the Klein Tödi, and beyond it the double peak of the Tödi. To a practised eye, all the formations which make up this huge mountain mass are distinctly traceable from the pass, commencing with the gneiss, which occupies the bottom of the Russein Thal, up to the Jurassic rocks which constitute the peak. Looking from the Sand Grat it appears not altogether impossible to reach the summit of the Tödi by a nearly direct course—of course a long and stiff climb. The Porta da Spescha is not seen, but Piz Mellen, the Stockgron, and the long jagged spur dividing the Gliems Thal from the Russein Thal.

The descent over the Sand Glacier is easy; but as there are some covered crevasses, the usual precautions should not be omitted so long as the way lies over the névé. The best course is to bear somewhat to the l. till the moraine is reached. Thenceforward the way is free from difficulty. About 2 hrs. are needed to reach the châlet of the Upper Sand Alp, and from thence, descending, Stachelberg is easily reached by a good path, through scenery of great beauty and grandeur, in 4 hrs. (see Rte. A).

In taking the pass from the Stachelberg side, 4½ hrs.' good walking are required to reach the Upper Sand Alp; about 2½ hrs. thence to the summit; and 4½ hrs. more for the descent to Dissentis. It is advisable to start rather before the day, as some of the finest scenery will be lost if night should come on during the descent to Stachelberg or Dissentis.

As mentioned in Rte. A, the easiest course for ascending the Tödi is from the head of Val Russein, either by the Porta da Spescha or the Porta da Gliems. Those who take the former course, probably the shortest, will sleep at the Upper Russein Alp (6,913′). The ascent is partly by the W. slopes

of the Stockgron, but finally by a steep and narrow glacier which forks below the top. Keep to the S. branch, on the rt. side of the principal tooth of rock rising between the Stockgron and Piz Mellen. The *Stockgron* (11,211′) is easily reached from the plateau.

There is no difficulty in going from Dissentis direct to the Maderaner Thal by the *Brunni Gletscher*. Its head is accessible from the head of Val Cavardiras by a snow col called *Brunni Pass* (8,875′), but much more directly by the *Acletta Pass* (8,977′), a little way SW. of the first, communicating with the head of *Val Acletta* due N. of Dissentis. By the latter course, taken by Mr. Sowerby in 1864, the new inn at Waldibalm is reached in 8½ hrs. The rope is requisite on the glacier.

Route G.

Ilanz, or Dissentis, to Stachelberg, by the Kisten Pass.

This is a wild pass, presenting some very striking scenery, not to be attempted in bad weather, nor without a guide. It may be made in one day from Ilanz, but better from *Brigels*, where there is a tolerable Inn, and guides may be found for the pass.

As mentioned in Rte. C, nearly one league from Ilanz, by Ruis, the road to Dissentis crosses a considerable stream, formed by the union of the torrents issuing from three alpine valleys. The most westerly and the largest of these torrents is the *Flum*. It has cut for itself a deep channel, much below the level of an irregular plateau on its right bank, on which are numerous villages and hamlets. The chief of these is *Brigels* (4,272′), commanding fine views of the surrounding peaks and glaciers. From the side of Dissentis, Brigels is approached by a rough road, which mounts from near Trons, and passes by the village of *Schlans*.

WNW. of Brigels rises the finely formed peak of the *Brigelserhorn*, or *Piz Tumbif* (10,555′), connected to the N. by a snowy ridge with the *Piz Frisal* (10,909′) called in Glarus *Bündner Tödi*, which lies a little S. of the *Biferten Stock* (11,237′). Between a ridge running eastward from the Brigelserhorn towards the village of Brigels and the main chain is a very beautiful alpine glen, the *Frisal Thal*, closed at its upper end by the *Frisal Glacier*. The track to the *Kisten Pass* (8,281′) goes at first NW. towards the Frisal Thal, then mounts nearly due N. by the *Rubi Alp*, and finally, after passing on the l. the *Kistenstöckli* (9,020′), turns westward for the final ascent. The pass, commanded on the E. side by a massive projecting buttress of the Hausstock, is a singularly wild spot. On the N. side, the *Limmernbach* torrent has cut a ravine of extraordinary depth through the limestones and slates of the Jurassic formation. It is mere cleft, utterly inaccessible to human foot. The Selbsanft, on the W. side (9,931′), and the ridge on the E. side, connecting the Hausstock with the *Ruchi* (10,226′), slope with extreme rapidity towards the abyss; and to avoid this perilous slope, the track, which is scarcely traceable, ascends on the right side (probably to near 9,000 ft.), and traverses for a considerable distance the névé of the Kisten Firn. The dreary *Mutten See* (7,786′), often frozen over even in summer, lying in a hollow between the Ruchi and the Muttenalpstock, is passed, and the usual way then descends to the châlets of the *Limmern Alp*. Very steep zigzags, at an extraordinary height above the chasm of the Limmernbach, lead down to the valley of the Linth, close to the Pantenbrücke, 1½ hr. from Stachelberg (Rte. A). From 9 to 10 hrs. (?) are required to reach Stachelberg from Brigels, and an early start is advisable. A shorter way for descending to Stachelberg by the Trift Alp, avoiding the Pantenbrücke, is little used as it is considered somewhat dangerous.

The only known ascent of the *Biferten Stock*, or *Piz Durgin* (11,237′), was effected in 1863, by MM. A. Roth, G. Sand, and Raillard, guided by H. Elmer.

Keeping at first on the N. side of the ridge connecting the peak with the Kisten Pass, and then along narrow ledges on the face of the precipices overlooking the Frisal Thal, they reached the snowy arête in 3¼ hrs., and passing a projecting summit (11,037′), gained the peak in 50 min. more. The expedition is of great interest, but requires minute local knowledge in the guide.

The *Selbsanft* is reached without serious difficulty by descending from the Nüschenalp to the Limmernboden. There is a cave here, near the point where the Limmernbach issues from the *Limmern Glacier*, offering good shelter for the night. The *Hinter Selbsanft*, or *Platalva* (9,921′), is more easily reached, and commands a much finer view than the *Vorder Selbsanft* (9,020′), conspicuous from Stachelberg. Herr Scheuchzer, with the guide Leuzinger, effected the descent from a point N. of the summit to the Tentiwang, near the Lower Sand Alp, through an extremely steep gully in the rocks.

Route H.

ILANZ TO ELM, IN THE SERNFT THAL, BY THE PANIXER PASS.

	Stunden	Eng. miles
Panix . . .	2¼	7
Panixer Pass . .	2½	6½
Elm	3¼	8
	8	21½

This pass is sometimes traversed by mules; but in cloudy weather, or after fresh snow, a guide is required. It is inferior in scenery to the Segnes Pass (Rte. I), but derives some interest from the passage of the Russian army under Suwarof in 1799. Like the rte. last described, the path to the Panixer Pass diverges from the high road close to Ruis, about one league above Ilanz; but instead of following the Flum, which drains the SW. flanks of the Hausstock, it mounts by the l. bank of the *Schmue* torrent, which descends from the E. side of that group, to the hamlet of *Panix* (Inn: small, tolerable), passing through very beautiful woodland and rock scenery. Panix stands 4,265 ft. above the sea at the opening of a narrow glen, deeply cut into massive verrucano rocks. Numerous streams descend into it in picturesque waterfalls, through clefts which they have excavated for themselves. The path leading to the pass winds steeply up, keeping to the l. bank of the torrent at some distance from the dark chasm through which this works its way, till the Panixer Alp is attained, which lies on a middle shelf of the valley. The torrent is crossed by large flags laid across its deep channel, here scarcely a yard wide, though formed by the union of three glacier streams. Leaving the *Wichlen Glacier* on the l. hand, and crossing the stream from it, the way is for a while about due N., up a steep declivity of Jurassic limestone. Turning at last nearly due E., the path, in some places marked by poles, reaches the actual pass (7,907′), sometimes called Hexeneck (Witches' Nook), in about 5¼ hrs. from Ilanz. This is a savage, dreary spot, lying between a massive outlyer of the Hausstock on the W., and the *Jätzstock*, one of the peaks of the Vorab group, on the opposite side. The descent, after passing a small tarn, lies through a narrow ravine, in which the snow often rests throughout the summer, and then down a succession of huge steps, forming successive terraces of nummulitic limestone. The way is marked out by poles. The highest châlets are at the *Jätz Alp*. Below these the path is rather better, until in 2 hrs. from the summit it enters the W. branch of the Sernft Thal, about 1¼ hr. above Elm (Rte. K). From that point, instead of descending the valley to Elm, the traveller may reach the Baths of Stachelberg, by the Richetli Pass (Rte. M), in about 5 hrs. The day's journey from Ilanz to Stachelberg, is, however, long and fatiguing—as much so, perhaps, as that over the Kisten Pass. The scenery of the Panixer is finer when the pass is taken from the Glarus side, as the views in the descent towards the

Vorder Rhein are much superior to those on the N. side. The most striking thing about this pass is the recollection of Suwarof's extraordinary retreat in October 1799. Having advanced victoriously across the St. Gothard to Altorf, then forced to make the seemingly desperate passage of the Kinzig Culm to Glarus, the old warrior found himself, in a wintry season, with deep snow already fallen, before the alternative of surrender to the greatly superior force of the French, or a retreat into the Grisons, across an alpine chain, then scarcely known except to some native hunter. He chose the Panixer as the least hopeless of the passes, and, in five days of mortal struggle and horrible suffering, led the remains of his army to Ilanz, on the 10th October. It was reckoned that one-third of the whole force perished in this memorable retreat. They fled, pierced by the bullets of the pursuing French, frozen to death on the snow, but most of all dashed to pieces in the chasms on either side of the pass, where their bones lay, for many a day, monuments of a period dear to some lovers of military glory.

Route I.

REICHENAU TO ELM, BY THE SEGNES PASS.

This is a very interesting pass, and offers no difficulty in fine weather to a moderately-trained mountaineer. The way is in places not easy to find, and it is advisable to take a guide. The road from Reichenau to Flims (2¼ hrs.) is described in Rte. A; and from thence to Elm is 6½ hrs'. good walking, but 7 hrs. are commonly employed, the ascent to the pass being 5,000 ft., or a little more, when the pass is made from Elm.

For some distance above *Flims* the ascent lies through alpine pastures. From the highest of these, called Gassons, two different ways may be taken to reach the pass. The easier of the two lies to the l., and traverses an ancient lake-bed; the other, rougher, more difficult to find without a guide, but more interesting, keeps to the rt. along the foot of the Flimserstein, and ascends over rocks to the junction of two alpine torrents. That called Segnes Sura descends a little W. of S. from the Segnes Glacier. The other stream, called Segnes Sut, is fed by a small glacier bearing the name *Flimser Firn*, lying in a hollow between the Segneshorn and the Ofen. There is here a fine view of the singular range of shattered rocks that form the crest of the ridge connecting the Segneshörner with the Ofen. In one part this ridge, which is narrowed to a mere wall, is cut into strangely-shaped pinnacles and columns, called the Jungfrauen. Near to the Segneshorn the wall is cleft through, so as to leave a wide opening, which forms the pass; while a little to the l. it is actually perforated by the singular hole, or natural tunnel, well known to the people of Glarus as the *Martinsloch*. On four days in the year the sun shines through it upon the village church of Elm. The ascent to the Martinsloch from the S. side is difficult, and the descent on the N. side still more so: it scarcely rewards the trouble and risk.

In ascending to the Segnes Pass, the traveller follows the W. branch of the valley, or Segnes Sut, after jumping over the torrent of Segnes Sura, at a spot where it has worked for itself a deep narrow channel, and then continues the ascent by rocks with snow-slopes intervening, until he reaches the breach, through which a wide view of the Glarus Alps is suddenly obtained. It is equally easy to cross the Flimser Firn, which, seen from above, looks flat as a frozen lake, and make the ascent from thence to the *Segnes Pass* (8,612′).

The *Segneshorn*, or Piz Segnes (10,870′), which overhangs the pass, is also known as the Tschingel, and the pass thence called the Tschingel Pass.

To the E. and NE. are the peaks enclosing the head of the Sardona Glacier, that descends into the head of the Kalfeuserthal (Rte. K).

A little below the Martinsloch, on the N. side, the botanist may gather *Androsace Heerii*, which has been found only in a few spots in this district.

The descent towards Elm, following a direction but little N. of W., is steep but not difficult; at first over débris with no marked path, so that in cloudy weather it would be easy to go astray. At length a stream is reached; this is followed till it falls into a more considerable torrent—the main branch of the Sernf, fed by the snows of the Ofen—and following this on its l. bank, in less than an hour from the junction, a bridge is attained just above the village of Elm, on the rt. bank of the Sernf.

The road from Glarus to *Elm* (new Inn, clean and comfortable, kept by Jacob Elmer), is described in Rte. K. Heinrich Elmer and Johann Elmer, both of Elm, are excellent guides for the entire range between this and the Tödi.

The geologist will find this pass very interesting. The rock forming the shattered ridge at the summit, whose singular forms attract the attention of every traveller, is exactly similar in appearance and mineral structure to the verrucano which underlies all the secondary stratified rocks in the valley of the Vorderrhein; but it here rests upon the nummulitic (eocene) limestone. This *post-eocene* verrucano has been found in several other portions of the Tödi chain, especially in the ridge of the Ringelspitz, at the head of the Bargiasthal. See Theobald's work already cited.

Route K.

GLARUS TO RAGATZ, BY THE SERNFTHAL AND SARDONA GLACIER.

	Hours' walking	Eng. miles
Schwanden	1¼	4
Engi	1¾	5½
Elm	1½	4½
Sardona Pass	4	8
Vättis	6	15
Ragatz	2½	7½
	17	44½

This is one of the most interesting routes in this part of the Alps; but, whichever pass be taken, it is by no means easy, and is fit only for practised mountaineers. As far as Elm there is a good char-road, and that place, which is the point of meeting of the paths from five passes here described, is one of the best head-quarters for a traveller in this part of Switzerland.

The *Sernfthal*, sometimes called Kleinthal to distinguish it from the main valley of the Linth, or Grossthal, joins the latter at Schwanden, about 4 m. above Glarus (Rte. A). The road to Elm crosses the Linth above the junction of the two streams, and then passes the Sernf to its rt. bank. To the S. opens the tributary glen of the *Niederbach*, leading directly up to the *Kärpfstock* (9,180′), the highest summit of the Freiberge. It may probably be most easily accessible from this side.

The lower part of the Sernfthal is contracted, but at *Wart*, where a torrent from the N. forms a pretty waterfall, it opens out. Goître and cretinism are too common here, while the people of the head of the valley seem to be a healthy and vigorous race.

Engi (2,540′) stands at the junction of the *Mühlethal* with the Sernf. By that way a path leads due N. to the *Widdersteiner Furke* (6,608′?), a pass in the range dividing the Sernfthal from the L. of Wallenstadt. The pass overlooks the lakes at the head of the Murgthal, through which the village of Murg (Rte. C) is reached in 7 hrs. from Engi. Following the main branch of

the Mühlethal to the NE. is the track to Wallenstadt (Rte. L).

On the l. side of the Sernf about 1 m. from Engi are the quarries of the *Plattenberg*, long known for the superior quality of slate there extracted, and especially interesting to palæontologists for its fine specimens of fossil fish, of which 41 species have been figured by Prof. Agassiz. More recently the same quarries have afforded a Chelonian reptile, and the skeleton of a bird.

About 1½ m. beyond the Engi is *Matt*, at the opening of the Krauchthal leading to the Riesetten Pass (Rte. L). Here dwells, if still alive, Johann Maduz, a well-known guide, who accompanied Prof. Ulrich in many of his expeditions in the Alps, and was the first man to reach the second pinnacle of Monte Rosa. The same obscure village was the birthplace of Prof. Oswald Heer, the eminent naturalist. The road crosses to the l. bank of the Sernf before reaching

Elm (3,215′), the last village in the valley, with a good and reasonable Inn kept by Jacob Elmer—good beer. This is close to the meeting of the three main branches of the Sernf. The SW. branch leads to the Panixer Pass (Rte. H), and the Richetli Pass (Rte. M). The SE. branch is that leading to the Segnes and Sardona Passes; while the third branch flows from the Unterthal, which mounts ENE. to the Ramin Pass (Rte. L). Until recently the only way known for reaching the Kalfeuserthal from Elm was by a very circuitous track, first crossing the Ramin Pass to the Weisstannenthal, and then traversing the mountain range separating that valley from the Kalfeuserthal. Two passes from Elm are now known, of which the first may bear the name Sardona Pass, the second that of Scheibe Pass. The Editor has been favoured with the following account of the way from Elm by the Sardona Pass from Mr. A. W. Moore, one of several travellers who traversed it in 1862. Another party who subsequently passed this way without the assistance of a competent local guide were involved in considerable difficulties.

'It is a walk of 10 hrs., exclusive of halts, from Elm to Vättis by this rte. Heinrich Elmer, of Elm, is the only man at that place who knows the way, and is a good guide, but demands a rather excessive sum for the expedition. We gave him 17 fr. for going as far as the foot of the Sardona Glacier, beyond which a guide is under no circumstances required. The scenery of the Kalfeuser Thal is seen to greater advantage in crossing from Elm to Vättis, than *vice versâ*.

'The usual rte. of the Segnes Pass is followed as far as the summit, 3¼ hrs.' sharp walking.

'From the Piz Segnes (10,870 ft.) run two spurs, one in a SW. direction, the other due S. The Segnes Pass crosses the former; in the angle between the two, is a curious patch of level glacier, locally known as the Flimser Firn; and over the second ridge, which forms the l. bank of the glacier, lies the rte. to the Sardona Glacier. Crossing the Flimser Firn and scaling the rocky barrier on its opposite side by a rather steep snow-couloir close under the Piz Segnes, the col, a well-marked gap in the ridge, is reached in 50 min. from the Segnes Pass, which it overtops by about 500 ft. The traveller now sees, at a considerable depth below him, the level ice-stream of the Segnes Glacier, on to which it is necessary to descend by a snow-slope of formidable steepness, especially in its upper portion. Neither here nor on the glacier below should any of the recognised precautions be dispensed with, concealed crevasses being numerous. The Segnes and Sardona Glaciers are branches of the same field of névé; but the former flows S., the latter E., the angle between the two being occupied by the *Trinserhorn* (10,573′). To get from the Segnes on to the Sardona Glacier, it is necessary to traverse the

former to its origin, a broad snow-grat, which is reached in 50 min. from the col. Here, the customary plan is to make for the centre of the Sardona Glacier, which is gently inclined, and keep down it for 20 min., when the top of a ridge of rocks is gained which separates two of its branches. The arm of glacier on the rt. ends abruptly in the most extraordinary manner, in a perpendicular wall of blue ice, on the brink of a precipice; but that on the left stretches farther down into the valley. On to this latter it is easy to descend, after keeping for 20 min. along the rocks, which are fearfully rotten and require great caution in passing. The glacier presents no difficulty, and in 10 min. the terminal moraine is reached. A steep and stony descent leads in half an hour to the level of the *Kalfeuser Thal*, where a track is soon found on the l. bank of the stream, which conducts in 1 hr. more to the Sardona Alp. Looking from here towards the glacier it appears as if a still shorter and easier descent might be found, by turning sharp to the rt. from the snow-grat, and following the most southerly arm of the glacier under the Trinserhorn. It is a hot but lovely walk of 2½ hrs. descending about due E. from the Sardona Alp to Vättis, along a good but ill-contrived path which rises and falls perpetually. The scenery improves as the valley is descended, and in the neighbourhood of, and below, the wretched little hamlet of St. Martin, attains its greatest perfection. At this place the path crosses to the rt. bank of the stream, which it follows to Vättis, passing for some distance through a magnificent forest, where the pines attain a height and symmetry rarely seen in the Alps. At *Vättis*, where the valley turns NNE., nearly at right angles to its former course, is a rough little Inn, where an omelette and some fair red wine can be had, and anyone wishing to cross the pass from this side could pass the night. It is a drive of 3 hrs. through pleasing scenery to Ragatz, but the distance might be walked in at least half an hour less time, as the char-road is execrable, and, though down the valley, rises the whole way until it reaches Pfäfers, only a short distance from Ragatz.'—[A. W. M.]

For the way from Vättis to Ragatz, see Rte. N.

The course above described involves the passage of three ridges diverging from the Segneshorn, of which the highest pass is not the gap in the southern ridge, mentioned by Mr. Moore, but the snow-saddle connecting the Segnes and Sardona Glaciers. This may best be named *Sardona Pass*, and pending more accurate measurement may be loosely estimated at 9,500 ft. in height. This pass may be made from Flims as well as from Elm. The Editor has received from Mr. J. G. Humphry notes of the passage from Vättis to Flims by a party of English travellers without a guide. They mounted by the S. bank of the Sardona Glacier, which seems not to have been touched till near the top. Owing to deep fresh snow, they employed more than 13 hrs. exclusive of short halts.

The second pass was first traversed by Mr. Stephen Winkworth, with J. B. Croz of Chamouni, and Heinrich Elmer of Elm. It lies on the N. side of the Segneshorn, at the origin of the range which extends through the Scheibe to the Grauehörner. This course is much more direct than that above described; but the pass is higher, probably near 10,000 ft. Being immediately S. of the *Saurenstock* (10,026′), it may best bear the name *Sauren Joch*.

'Leaving Elm at 2.50 A.M. we followed the path to the Segnes Pass for about ½ hr., then turned to l., climbing steeply through wood to the Falzüber Alp. Above this is steep shale; then 30 min. up a snow-couloir brought us to the top of the ridge between the Piz Segnes and the Scheibe (Saurenstock? Ed.) at 7.45. We descended to the Sardona Glacier by a rather

steep ice-wall of perhaps 500 ft., then by a climb of 30 min. down rocks ending with a snow-couloir. The descent of the Sardona Glacier is quite easy. Heinrich Elmer guided us, and asked 20 fr. for the day's work. He is a good guide, except on the ice, where he does not seem quite at home.'—[S.W.]

From a brief note in the 'Alpine Journal,' vol. i., p. 135, it appears that, some days before Mr. Winkworth's visit, a party consisting of Messrs. Awdry, Morshead, W. F. and A. Short, with two Valais guides, reached the ridge between the Piz Segnes and the Saurenstock, but did not descend on the E. side.

Route L.

GLARUS TO SARGANS BY THE SERNFTHAL.

There are several passes by which a traveller may reach Sargans from the Sernfthal; whichever of them may be taken, he must be prepared for a rather long day's walk.

1. *By the Ramin Pass.* About 10 hrs., exclusive of halts, from Elm. From Elm (Rte. K), 4½ hrs. from Glarus, a very rough path mounts through the so-called *Unterthal* to a pass on the NW. side of the Scheibe, called indifferently *Ramin Pass*, Ramin Furkle, or Ramin Grat, and also Foo Pass. It is but 6,772 ft. in height, and therefore the lowest of those leading to Elm. Nearly 4 hrs. are required for the ascent from that place. The descent lies at first E. to the Ober Foo Alp. Hence there is a way scarcely traced, and not to be found without a guide, leading to the upper part of the Kalfeuser Thal. The path to Sargans descends towards the NE. along the main stream by the Unter Siez Alp to the village of *Weisstannen* (3,642′), about 3½ hrs. from the pass. Here opens a narrow glen descending northwards from the range of the *Grauehörner*, whose highest summit, the *Piz Sol* (9,340′), lies SSE. of the village. The *Seez* torrent, formed by the union of the streams descending from the adjoining high mountains, flows through the *Weisstannenthal*, a silent, thickly-wooded valley, rarely trodden by strangers, through which a path leads in 2 hrs. down to *Mels* (Rte. C), near Sargans. If the traveller has arrived in time for the evening train, he may proceed from the Mels station on the one side to Wesen, or in the opposite direction to Ragatz or Coire.

2. *By Matt and the Rieseten Pass.* 3½ hrs. to Matt; 9 hrs. (?) thence to Sargans.—The way from Elm just described is too long for a traveller starting from Glarus, and wishing to reach Sargans by the Weisstannenthal. Nearly 2 hrs. may be saved by stopping at Matt in the Sernfthal (Rte. K), which may be reached by char, starting very early from Glarus, and then mounting through the *Krauchthal*, opening due E. at that village. A path ascends by the rt. bank of the torrent for some distance, but crosses to the opposite side where that narrow valley bends abruptly to the N. A not very long ascent leads up to the *Rieseten Pass* (6,644′). The view is not equal to that from the Ramin Pass, being limited by the nearer mountains. The descent lies E. from the summit to the Ober Siez Alp, and so down to Weisstannen, reached in little more than 6 hrs., exclusive of halts from Matt. Through the upper end of the Krauchthal it is possible to traverse the ridge S. of the *Spitzmeilen* (8,218′), and join the track (next noticed) from Engi to Flums.

3. *By Engi and the Flümserthal.* 3 hrs. to Engi; 7 hrs. (?) thence to Flums; 2¼ hrs. from Flums to Sargans. —A steep ascent leads from Engi (Rte. K) to the first plateau of the Mühlethal. In about 1¼ hr. the traveller reaches the junction of two torrents. The Widdersteinerbach descends about due S. from the col leading to the Murgthal, mentioned in

Rte. K. The other and more important stream is the Mühlebach, and by following this to its head he gains the 'col between the *Magern* (8,294′) and the Weissmeilen (?)' leading to the Flümserthal; 4 hrs. are required (?) to reach the summit of the pass from Engi, and 3 hrs. suffice for the descent to *Flums*, one of the stations on the rly. from Wesen to Coire, mentioned in Rte. C, about 6½ m. from Sargans.

The *Flümserthal*, through which lies the path descending from this pass, is drained by the destructive torrent of the *Schilzbach*, which, in the last century, almost completely destroyed the village of Flums.

Further information respecting the passes mentioned in this Rte. is much desired.

Route M.

ELM TO STACHELBERG, BY THE RICHETLI PASS.

6½ hrs. exclusive of halts.

This is an agreeable walk, which seems to connect the two places that afford the best head-quarters for mountaineers in the Canton Glarus. A good walker may make the distance from Elm in 6 hrs.; but when the pass is taken from Stachelberg, which is more than 1,000 ft. lower, nearly 1 hr. more should be allowed. The char-road extends up to the Sernfthal about 2 m. beyond Elm, and the path to the Richetli Pass is the same as that to Trons by the Panixer Pass (Rte. H) for 2 m. farther. Leaving that track which mounts to the S., the l. bank of the Sernf is followed for 25 min. more, and the stream then crossed to the Wichlen Alp. Here the way lies due E. through a ravine between the *Leiterberg* to the S. and the *Erbserstock* on the N. 'At the top of this it enters on a level valley, apparently at some time the bed of a lake, where stand the highest chalets, and from which the col is visible, to the S. of the Kalkstockli, a point at the extremity of a ridge running down from the Kärpfstock. In 3 hrs. 25 m. from Elm we reached the col (7,526 ft.), which is very sharp, as the last 200 ft. on the E. side are very steep, and the ground falls away very rapidly for 1,500 or 2,000 ft. on the W. side into the Durnachthal. On entering the Durnachthal the path lies along the rt. bank of the stream till the second châlets on that side are reached, when it is better to cross the stream by a path which zigzags to it through the wood just below the châlets, and which leads down the l. bank into the Linth Thal just at the N. end of the village. We got to Stachelberg in 2½ hrs. from the col.'—[J. R. K.] In ascending from Stachelberg the usual course is to keep to the path on the rt. side of the Durnachthal. The ascent of the *Kärpfstock* (9,180′) might doubtless be combined with this pass. It is the highest of the group of mountains lying between the Linth Thal and Sernfthal, and N. of the Richetli Pass, called Freiberge, because, with a view to the preservation of chamois and other game, shooting was strictly forbidden within certain fixed limits. Whether the law be repealed, or merely disregarded, it seems certain that the chamois enjoy no security of the kind anywhere in this canton, and they have become very scarce.

Route N.

REICHENAU TO RAGATZ, BY THE KUNKELS PASS.

As mentioned in the introduction to this section, the Kunkels Pass separates the Calanda from the range of the Ringelspitz, with which it is orographically as well as geologically connected. It is not very interesting, and though but 4,432 ft. in height, the steep and stony path on the S. side is fatiguing and troublesome to ascend, and still more so if descended towards Reichenau. To the pedestrian who has seen

Coire it offers, however, a pleasant variation from the high road along the valley of the Rhine, and it may be taken in connection with a visit to the Baths of Pfäfers, or to the Kalfeuser Thal. Distance from Reichenau to the col 2 hrs., thence to Vättis 2 hrs., to Bad-Pfäfers 2 hrs., Ragatz ¾ hr. — in all, 6¾ hrs.

Having followed the road from Reichenau to Tamins (Rte. A), the way lies nearly due N.; at first entering a gorge between precipitous rocks, and then winding up steep stony slopes that lead to the pass: 5 min. E. of it is a point commanding a fine view of the Rhine valley. The descent on the N. side is easy; at first through a beech wood, then over meadows to Kunkels, and passing through pleasing scenery reaches Vättis, in the Kalfeuser Thal, in 4 hrs. from Reichenau. From Vättis the traveller may either follow the char-road to the convent of Pfäfers, and thence descend by the Steige to the Baths, or he may follow a rather troublesome path along the l. or W. bank of the Tamina (see Rte. C).

SECTION 28.

SENTIS DISTRICT.

The traveller who from any commanding eminence gains a panoramic view of the N. and E. of Switzerland cannot fail to remark a detached group of mountains, having no apparent connection with any of the principal masses of the Alps, lying in the NE. angle of Switzerland, between the Lake of Constance, the Rhine, and the L. of Wallenstadt. When he is told that the highest snowy summit of this group is the Sentis, he learns about as much as most strangers know respecting an outlying portion of the Alps filling a triangular space, each side of which measures about 25 English miles.

It is the district defined by the above limits that is described in the present section under the name Sentis District, derived from its highest and best known summit. The E. side of the triangle is formed by the mountains that overlook the l. bank of the Rhine between Sargans and the L. of Constance; the S. side is marked by the bold range, including the Churfirsten, that is on the rt. of the traveller going by the L. of Wallenstadt from Sargans to Wesen and Uznach. To the NW. the mountains subside gradually into the low hills that form the northern part of the Canton St. Gall. The greater part of the district belongs to that canton, but the upland valleys of the Sentis, and the highland tract overlooking the L. of Constance, constitute the little Canton of Appenzell, completely enclosed within the territory of its wealthier neighbour.

The mountains belonging to this district are divided into two groups by the valley of the Thur, or Toggenburg, dividing the Sentis range to the N. from the southern range, whose best known summits are the Churfirsten. The highest peak of the Sentis attains 8,215 ft., a height sufficient in this part of Switzerland to retain a considerable mass of permanent snow. The highest points of the southern range do not lie in the Churfirsten, but in the range farther E., to the N. of Sargans, including the *Faulfirst* (7,916′) and the *Alvier* (7,754′).

This district is interesting to the geologist from its offering on a smaller scale the main features that characterise the greater groups of the Alps.

The mountains here described, and especially the upland valleys of Appenzell, include a great deal of charming scenery. The scale is altogether smaller than that of the Pennine or Bernese Alps, and the objects of interest lie closer together, making this very eligible exercise-ground for moderate walkers who do not aim at laborious or difficult excursions.

The people are yet to a great extent unspoilt by the influx of strangers.

The German visitors, who are numerous, content themselves with the rather rough, but clean, quarters found in the cheap country Inns, and to use the significant expression of a recent writer, 'das Land ist noch nicht verengländert.' Appenzell is the head-quarters of the *Molkenkur*, or goat's whey cure, practised elsewhere in Switzerland, but nowhere on so large a scale as here. Many hundreds of Swiss and German visitors pass some weeks in the summer at one or other of the mountain villages hereafter named, in order to go through the prescribed course. The whey is conveyed warm from the neighbouring châlets, or *Sennhütten*, and taken in the morning before breakfast, with a walk of 10 min. or ¼ hr. between each glass. The cure is believed to be very beneficial to persons with delicate chests, disordered digestion, &c. It may be supposed that pure air, regular living, and moderate exercise have a large share in the salutary results.

For the mountaineer the best head-quarters are found at Appenzell and Weissbad, and at Wildhaus in Toggenburg.

English travellers approaching this and the adjoining parts of Switzerland commonly avail themselves of the Wurtemberg railway, mentioned in the Introduction, Art. II., passing by Heidelberg, Bruchsal, Stuttgart, and Ulm, and reaching the Lake of Constance at *Friedrichshafen* (Inns: Hotel Nestle, zum Schwan, by the Lake, good and reasonable; Deutsches Haus, near the rly. station; König von Würtemberg; Krone). Numerous steamers ply between that place and the other towns and villages on the lake.

Those who approach the L. of Constance from Basle and Schaffhausen usually take the railway from the latter town to *Constance* (Inns: Hecht; Adler — both highly recommended; Badischer Hof; Krone). This ancient imperial city, belonging to the Duchy of Baden, though standing on the S. side of the Rhine, where the river connects the main body of the Lake of Constance with its western extension—the Unter See, preserves many traces of its former importance. The cathedral, commenced in the eleventh century, is interesting to lovers of architecture, and various memorials of the meeting of the famous council, and the execution of John Huss and Jerome of Prague, afford occupation to the sight-seer. Steamers start four or five times daily for Rorschach and other ports on the Lake.

Route A.

WINTERTHUR TO RORSCHACH, BY RAILWAY.

	Eng. miles
Wyl	17⅓
Flawyl	9½
St. Gall	8¾
Rorschach	10¼
	45⅓

As those who wish to enter Appenzell by a carriage-road usually approach from St. Gall, it seems most convenient to describe in the first place the rly. by which they ordinarily reach that town from Zurich or Schaffhausen, or else from Rorschach on the Lake of Constance.

Winterthur (§ 27, Rte. C) is connected by rly. with Zurich and Schaffhausen, and also with the branch to Romanshorn on the L. of Constance, a line of much commercial importance, but little frequented by tourists. From the same station diverges the line now described leading to Rorschach, and thence (Rte. C.) to Coire.

On leaving Winterthur the rly. is carried about due E. through a fruitful but not very interesting country, gradually rising above the valley of the Töss. At *Elgg* (Inn: Ochs), 1,778 ft. above the sea, the rly. quits the Canton Zurich and enters that of Thurgau (Fr., Thurgovie), a fertile district extending hence to the S. shores of the

L. of Constance. About 9 m. farther it enters the Canton St. Gall at

Wyl (Inns : zum Sehönthal ; Löwe), a thriving town above the l. bank of the Thur. The road through the Toggenburg (Rte. G) here diverges to the S. From the rly. station the higher summits of the Sentis are seen flanked to the rt. by those of the Churfirsten, and to the l. by the distant mountains of the Vorarlberg. The rly. now bends somewhat to the S., and crosses the Thur by a long lattice bridge. The Canton St. Gall, now traversed, is a seat of much industrial activity. There are many cotton-mills, chiefly worked by water-power, and an extensive trade in embroidered and worked muslin. Beyond *Flawyl* (2,015′) the rly. is carried over the Glattbach—not to be confounded with the stream so named near Zurich—by another lattice bridge nearly 100 ft. above the stream. A still finer bridge of the same kind traverses the *Sitter* about 3 m. from St. Gall, before reaching the *Bruggen* station. It is 550 ft. long, and is supported at a height of 222 ft. above the stream by three open-work columns of cast-iron. Through a deep cutting and a tunnel the rly. reaches the station for

St. Gall (Inns: Hecht, excellent, good cuisine, but not cheap, in the town ; Löwe, very good, near the rly. station ; Hirsch : second-rate houses are, Schwarze Bär ; Möhrli ; Schiff, Linde), the chief town of the canton, standing 2,201 ft. above the sea. This is now a flourishing manufacturing town, the chief seat of the Swiss worked muslin trade ; but the ancient walls, though partly levelled, and some of the buildings, recall the very different condition of society under which it first acquired celebrity. The town grew up under the shadow of a famous abbey, founded in the 7th century on the spot where St. Gall, an Irish monk, who first preached the gospel and taught useful arts in this region, had built for himself a hermitage. During the dark ages the light of learning and civilisation was kept alive here, and no small portion of the literature of Greece and Rome now known to us was preserved in the MSS. of the Abbey Library. With the increase of wealth and renown the spirit of the monks was turned to a less noble ambition. The abbots became secular princes, rising to importance under the favour of succeeding emperors, and ultimately forced to yield their pretensions before the modern spirit of lay independence, until the abbey was finally suppressed in 1805.

The buildings now in existence are not of much interest. The Abbey church was modernised in the last century, and contains little to interest a stranger except a very fine organ, an ancient crypt, and some curious objects preserved in the Sacristy, or *Custodie*. The Abbey Library (Stiftsbibliothek), open from 9 to 12 on Mondays, Wednesdays, and Saturdays, still contains many very important MSS., including some of the earliest examples of the High German dialect, with copies of classical writers, one of which, a Virgil, is said to date from the 4th century.

The Town Library contains many MSS. connected with the early history of the Reformation ; and in the same building are collections of natural history, coins, and pictures.

The theatre, opened in 1855, is said to be the finest in Switzerland. There are many cafés, and rooms where beer and wine are served to customers. The best beer is said to be had at a building called Walhalla, close to the rly. station.

There are many pretty walks in the neighbourhood. The most frequented is that to the *Freudenberg* (2,871′), reached on foot in ½ hr. from the town, or ¾ hr. by road, with an Inn on the top. The L. of Constance and the Appenzell mountains are well seen. A more extensive view of the Sentis range is gained from the *Fröhlichsegg*, fully 1 hr. S. of the town. The best view of the lake is from a hill called Peter und Paul, 1 hr. N. of the town.

The longer excursions are noticed in the following Rtes.

The hilly ground over which the rly. is carried from St. Gall to Rorschach must have caused a heavy expenditure for cuttings, tunnels, and embankments, which are traversed in rapid succession. After 3 or 4. m. the L. of Constance, with the hills of Suabia in the distance, comes into view, and the trains descend nearly 900 ft. before reaching the station at *Rorschach* (Inns: Krone; Hirsch—both good and reasonable; Seehof; Schiff; Grüner Baum; Schweizerhof; Helvetia, &c.). This is the principal Swiss port on the lake, a place of considerable trade, and is frequented for the sake of lake-bathing in summer. There is a new hotel bathing establishment—Kur- und Bad-Anstalt Horn—well spoken of, very near the town. Omnibuses to the rly. station. The chief walks for visitors are to the Mariaberg, now a school, once an appurtenance of the Abbey of St. Gall. 20 min. higher up, on a projecting rock, is the Castle of St. Anne, nearly a complete ruin. Still higher, and ¾ hr. farther, is the Rossbühel, a hill commanding a view of the entire lake. Nearer to Rorschach is the vineyard producing the Markgräfler wine, much esteemed in this part of Switzerland.

The *Lake of Constance* (Germ. *Bodensee*) is, next to the L. of Geneva, the largest of the alpine lakes. It is 41 m. long from Ludwigshafen to Bregenz, and throughout a great part of its length varies from 4½ to 9½ m. in breadth. The NW. end from Meersburg to Ludwigshafen is comparatively narrow. At Constance the lake is contracted to the dimensions of a river, with a manifest current, but opens out again to the W. in the *Unter See*, which is in truth a separate lake. Its mean height above the sea is 1,306 ft., but in spring the waters stand several ft. above the ordinary level. The greatest depth hitherto measured is 1,027 ft. The E. end between Rorschach and Lindau is said to be fast filling up, owing to the deposit of sediment from the Rhine.

Route B.

UZNACH TO ST. GALL.

	Post Stunden	Eng. miles
Lichtensteig . .	3¾	11¼
Peterzell . .	2¼	6¾
Herisau . .	3¼	9¾
St. Gall . .	1¾	5¼
	11	33

The Rte. here described is a very agreeable way for persons approaching the Canton of Appenzell from Zurich or Glarus who prefer a carriage-road through pleasing scenery to the circuit by railway.

From *Uznach* (§ 27, Rte. C), one of the principal stations on the rly. from Zurich to Coire, a road crosses the hilly tract that divides the valley of the Thur (Toggenburg) from the Lakes of Zurich and Wallenstadt. Fine views recur at many points where the road attains the crest of a ridge. The first of these is at *Bildhaus*, where there is a roadside Inn, about 4 m. from Uznach. Still more extensive is that from a second and higher ridge called *Hümmelwald*. After passing the village of that name, the road descends to *Wattwyl* (Inns: Löwe, Rössli), a large straggling village on the Thur (Rte. G.). The post station is here, and not at the adjoining town of

Lichtensteig (Inn: Krone), whose ancient battlements have a very picturesque aspect. It is connected with Wattwyl by an almost continuous line of houses along the road on the rt. bank of the Thur. The road here quits the Thur, and mounts in zigzags the hill to the E., near the summit of which are some remains, not seen from the road, of the ancient Castle of Neu Toggenburg. A solitary inn stands at the top, called Wasserfluh. Owing to the windings of the road, a foot-passenger following the short cuts may reach *Peterzell* (2,313′) in less time than a carriage. The position of this village in the valley of the Neckar is very pleasing. The road now mounts through green meadows along the rt.

bank of a tributary of the Neckar, passing *Schönengrund* (2,772′), with an Inn (Krone), where it enters Appenzell. After traversing a pass amidst the hills, the traveller descends to *Waldstatt*, where there are baths of no great repute, and thence to the extremely picturesque manufacturing village of *Herisau* (Inns: Löwe, Hecht), the most populous and thriving place in Appenzell. Less than 1 m. distant is *Heinrichsbad*, one of the most frequented watering-places in Switzerland. Besides the mineral waters, goats' whey and asses' milk are supplied to patients, and a cow-house is fitted up for persons with delicate lungs. The establishment is said to be well kept, and there are many pretty walks near at hand. The road from Herisau to St. Gall (Rte. A) passes close to the fine railway bridge over the Sitter, which well deserves examination.

Route C.

RORSCHACH TO SARGANS AND COIRE, BY RAILWAY.

	Eng. miles
Rheineck	5½
Altstädten	10½
Haag	13¼
Sevelen	5½
Sargans	7½
Coire	16¼
	58½

The same causes that in the middle ages made the shores of the L. of Constance, then called the Suabian Sea, the main channel for trade between Germany and the shores of the Mediterranean, seem likely to recall commercial intercourse to the same direction, from which it had for a time been diverted by political events. The force of facts will doubtless overcome local opposition and rivalry, and there can be little doubt but that the main line of railway between Italy and the north will be carried to the shores of the L. of Constance through the valley of the Rhine, most probably reaching Coire through the valley of the Vorder Rhein. The N. and E. shores of the lake are divided between the four principal states of S. Germany — Austria, Bavaria, Wurtemburg, and Baden; and this has doubtless delayed the construction of a railway connecting Rorschach and the valley of the Rhine with the ports belonging to those states, which would enable passengers and merchandise to pass directly from Coire to Munich, or Stuttgart, by the railways now open from Lindau and Friedrichshafen. Meanwhile the chief stream of traffic passes by Rorschach and the rly., now to be described, leading thence to Coire.

For about 3 m. from Rorschach the rly. runs along the shore of the lake, passing on the rt. the Castle of Wartegg, belonging to the ex-Duchess of Parma. On reaching the delta of the Rhine, a wide tract producing much maize and intermittent fever, the rly bears to the rt. away from the lake to *Rheineck* (Inns: Hecht, dear; Oehs), on the l. bank of the Rhine, and about 3 m. from the projecting point of gravel where it flows into the lake. Not far off is the Castle of Weinburg, belonging to Prince Hohenzollern Sigmaringen, commanding, from the adjoining park, fine views of the lake and the mountains above Bregenz. A still finer view, said to include ninety-two villages, is gained from *Walzenhausen*, 1 hr. distant, whence the traveller may descend in the same time to the *St. Margarethen* station, lying 2½ m. beyond Rheineck, and close to a ferry over the Rhine, leading to the opposite, Austrian, bank of the river, and to Bregenz (§ 34, Rte. A). This is the true opening of the valley of the Rhine, which is now seen to the SSW., with the peaks of the Rhactikon Alps in the background; from some points in the valley the Calanda and the Grauchörner—more than 50 m. from the spectator—close the view.

The rly. bears to SW. along the base of the hills to *Altstädten* (Inns : Drei Könige, with an omnibus to rly. station, and carriages and horses to Trogen, Gais, and Appenzell; Freihof; Löwe; Rössli), prettily situated in a fine part of the Rhine valley, at the junction of the roads leading to Trogen and Appenzell (Rte. E). The rly. now turns due S. In front is seen the opening of the valley of the Ill, through which the road of the Arlberg (§ 34, Rte. A) leads from Feldkirch to the Tyrol. The fine peaks of the *Sulzfluh* (9,324′), *Drusenfluh* (9,298′), and *Scesa Plana* (9,738′) are conspicuous in the ridge dividing the Prættigau from the Ill.

At the *Oberried* station those who are bound for the Kamor Pass (Rte. F) leave the train, which now proceeds nearly in a straight line SSW., passing the stations of *Rüti* and *Salez*. On the E. side of the river is the Austrian town of Feldkirch. The *Haag* station is opposite to a depression in the range on the rt., marking the division between the Sentis and Churfirsten ranges. Here the road from Wildhaus to Toggenburg (Rte. G) descends into the Rhine valley. This portion of the valley is flat and marshy, being exposed to frequent inundations from the rise of the river. The *Buchs* station is near to the Castle of Werdenberg, the seat of a famous family, now extinct, who bore that name. The present owners allow it to be seen by strangers. Bearing somewhat E. of S., the rly. passes opposite Vaduz (§ 34, Rte. C), the chief place of the little principality of Liechtenstein on the E. side of the Rhine, and soon reaches *Sevelen*, at the foot of the *Alvier* (7,754′), the summit of which may be reached in 4 hrs. About 2 m. farther the valley bends to SW., and before long reaches *Trübbach* (Inn : Krone, good), the most convenient point for the ascent of the Gonzen, which may, however, be also reached from

Sargans (Inns : Löwe; Rössli.) The village is a few minutes' walk from the rly. junction station, where the line from Zurich or Winterthur by Wesen (§ 27, Rte. C) joins that from Rorschach to Coire.

The *Gonzen* (6,014′), immediately N. of Sargans, is a promontory from the range whose highest summits are the Faulfirst and the Alvier. The mountain is chiefly known for the mine of rich iron ore, worked for many centuries, some say by the Romans, and still very productive. A bridle-path, passing by the old Castle of Sargans, and mounting through a beech wood, leads to the mine, to which admission is given by tickets issued at the smelting works near Plons, 2 m. from Sargans. It is well worth while to ascend to the summit of the mountain, commanding a very interesting view. The most prominent object is the fine peak of the Falknis (8,338′) on the opposite side of the Rhine, backed by the higher peaks of the Scesa Plana, and the Silvretta Alps, at the head of the Prættigau. The ascent from the mines to the summit of the mountain is not easy for unpractised climbers, as it is in part effected by ladders fixed to the face of a rocky precipice. There is a much easier way from Trübbach, mentioned above.

The rly. from Sargans to Ragatz and Coire is described in § 27, Rte. C.

Route D.

RORSCHACH TO TROGEN, GAIS, APPENZELL, AND WEISSBAD.

	Hours' walking	Eng. miles
Heiden . . .	1¾	5
Trogen . . .	1¾	5
Gais . . .	2	6
Appenzell . .	1¼	3¾
Weissbad . .	0¾	2¼
	7½	22

Omnibus daily from Rorschach to Heiden, and diligence between Heiden and St. Gall.

The way here described is the best for a traveller arriving from the N., and wishing in a short excursion to see the chief places of interest in Appenzell.

The main roads traversing the canton from W. to E., at rt. angles to the direction here indicated, are noticed in the following Rtes.

The small Canton of Appenzell is divided into two nearly independent sections; the Northern, called Ausser Rhoden, chiefly inhabited by Protestants; the Southern—Inner Rhoden—exclusively Roman Catholic. This naturally produces some marked contrasts; but in both divisions the stranger finds more simplicity of manners, and less thirst for gain, than is common in other parts of Switzerland. The hills—for they scarcely exceed 4,000 ft. in height—of the northern part of the canton are so easy of access that the stranger has a choice of many different paths; and the excellent custom prevails of placing finger-posts at the meeting of paths, so that, even without a guide, there is rarely any difficulty in finding the right way. The road from Rorschach to Heiden mounts a long hill to Wienachter-eck, where flags are quarried on a large scale, and sent to Germany and Holland. The village of *Grub* is divided into two distinct hamlets—the one Catholic, the other Protestant. At the latter a road turns to the E. and leads to

Heiden (Inns. Freyhof, a large establishment, with reading-room, good and cheap, rooms from 7 fr. to 12 fr. a week; Löwe, smaller and cheaper; Schweizerhof; Krone; Linde). one of the places most frequented for the Molkenkur. Standing about 2,660 ft. above the sea, it enjoys good air and some pretty walks in the neighbourhood, but it is not comparable for the beauty of the adjoining scenery to other places mentioned below. The village is new, having been rebuilt since a destructive fire in 1838. The Chapel of St. Anthony, 1¼ hr. from Heiden, on the summit of the ridge overlooking the valley of the Rhine, commands a very extensive view. It may be taken in the way from Heiden to Altstädten. The pedestrian who does not care to visit Heiden may take a direct course from Reformirt Grub to Trogen by the ridge of the *Kaien* (3,668′). The summit commands a noble panoramic view. It may also be reached from Heiden in 1¼ hr. The char-road from Heiden passes along the S. side of the Kaien for about 3 m. to *Wald*, and then becomes more picturesque as it traverses a deep ravine and some fine wood before reaching

Trogen (Inns: Schäfli; Krone; Löwe), a clean and pretty village, the chief place of Appenzell Ausser Rhoden. Though worth seeing as a favourable specimen of a thriving Swiss village, it does not contain much that need detain a stranger. The char-road hence to Gais is rough and circuitous, but passes through picturesque scenery, with here and there some fine distant views. After mounting a ridge called Weisseck, it descends rather steeply to SW. through a glen to *Bühler*, on one road from St. Gall to Altstätten (Rte. E). That road is now followed to SE. It mounts along the mountain stream called *Rothbach*, and after leaving to rt. the road to Appenzell, in ½ m. farther reaches

Gais (Inns: Ochs; Krone; Lamm—all clean and reasonable), an extremely pretty village, with wooden houses scattered amidst the fields, in many of which lodgings are let in the summer season. This is the most frequented of the Appenzell watering, or rather milk-drinking, places. Pedestrians usually take the mountain called *Gäbris* (4,119′) on the way between this place and Trogen. The inn (zum Gemsle) first built on the ridge was not sufficiently clear of forest to command a remarkable view; another more comfortable establishment has been lately opened on a point unencumbered by trees, whence is gained a wide panorama of the Alps of NE. Switzerland. The way from Trogen over the mountain takes no more time than the détour by char-road.

The road from Gais to Appenzell returns towards Bühler for about ½ m., and then turns to the l. and descends about 3 m. along an affluent of the

Sitter, which latter stream is crossed on reaching the village of

Appenzell (Inns: Hecht; Adler; Löwe), the chief place of the Inner Rhoden division of the canton, and one of the favourite places for the Molkenkur. Lying in a rather deep valley, 2,553 ft. above the sea, the higher mountains to the S. present themselves in more striking aspect than from the neighbourhood of Gais or Heiden. In a building called the Archiv are the banners wrested by the Appenzellers in the 15th and 16th centuries from the Austrians, Tyrolese, Genoese, and Venetians. The mountaineer will prefer to fix his head-quarters at

Weissbad (2,690′), ¾ hr. SE. from Appenzell. The only inn and Molkenkurhaus here is rougher and less comfortable than those at Appenzell and Gais, but the traveller will find cleanliness, attention, and tolerable food. When the house is full, as sometimes happens, he may go ¼ hr. farther, to the village of *Schwendi*, where there is a rough country Inn.

The baths at Weissbad are supplied with water that seems to contain no mineral ingredients, but its free use externally as well as internally may not on that account be less salutary to those unaccustomed to the application.

The position of Weissbad is admirably suited for excursions, most of them within the reach of very moderate walkers. Three mountain torrents—*Weissbach*, *Schwendibach*, and *Brühlbach*—flowing from three parallel glens lying between the ridges of the Sentis, unite at Weissbad, and each of them may form the object of a pleasant walk from the Baths.

The favourite expedition is to the *Wildkirchli*, on the slopes above the l. bank of the Schwendibach. The way lies by Tribern and the Bodmen Alp; in 1½ hr. the traveller reaches the base of some vertical rocks, where a little Inn (zum Aescher) clings to the face of the rock-wall. A narrow but safe path leads to the first cave, which, some 200 years ago, was fitted up as a chapel dedicated to St. Michael. It stands 4,924 ft. above the sea. A few steps farther is a second cavern, which long served as the dwelling of a hermit. The last of these perished a few years ago by accidentally falling over the precipice near at hand. Refreshments are now offered for sale here by a native speculator. The cave is connected with a long subterranean passage through the rock, which opens abruptly by a door at the upper end upon the beautiful mountain pasture called Ebenalp, lying about 5,400 ft. above the sea, on a shelf of the mountain above the precipitous rocks of the Wildkirchli, and commanding a beautiful view of the surrounding country. Among other rare plants found here is *Willemetia apargioides*. Instead of returning the same way, the pedestrian may now ascend the Schäfler (6,227′), then descend to the Alten Alp, and return to Weissbad along the Schwendibach. For the latter part of the excursion it is expedient to take a guide, but this is quite unnecessary if the walk be limited to the Wildkirchli. It is also possible to cross the ridge NW. of the Ebenalp, and descend to a pretty waterfall called *Leuenfall*, returning thence in 1¼ hr. to Weissbad. The latter is one of the sights frequented by visitors. The *Kronberg* (5,381′) is a fine point, which may be reached in about 2 hrs. E. of Weissbad, but more easily from Gonten (Rte. H). The Kamor and Hohen Kasten, as well as several other interesting excursions mentioned in the following Rtes., may be easily reached in a day's walk from Weissbad.

The main object of attraction in this neighbourhood to a mountaineer is the *Sentis*, and the surrounding peaks. The name of the mountain is often written Säntis, but the common orthography, which corresponds to the pronunciation, is here followed. The name is sometimes given to the entire group of high peaks lying between the sources of the Sitter and the Toggenburg valley, to which the collective

name Alpstein is also applied. The highest peak, sometimes called for distinction Hoh Sentis, and sometimes Gross Messmer, is reached in 6 or 7 hrs. from Weissbad; the charge for a guide is only 5 fr. The easiest way is by the glen of the Schwendibach, rising above the rt. bank to the Hütten Alp, and then by a path along the precipitous rocks of the Marwies and the Gloggeren, overlooking a small lake on the rt., till in 3 hrs. from Weissbad the *Meglis Alp* (4,855′) is reached. Here are châlets where very fair quarters are found for the night by those who would reach the summit early. A botanist or geologist will find abundant occupation here for a stay of several hrs. The nummulitic limestone abounds in marine fossils, and fine specimens may be easily extracted. The track is now scarcely traced. After climbing over débris to a hollow called Milchgrube, where snow lies during the summer, the way, which had hitherto lain to SW., bears nearly due W. On reaching a depression in the ridge of the mountain, called Hinter Wagenlücke, a fine view to the N. rewards the traveller. Here begins the extensive field of névé that stretches up to the last rocks; when these are reached, a stiff scramble of a few min. suffices to attain the highest peak, 8,215 ft. above the sea. As may be supposed from the isolated position of this summit, the alpine panorama is vast, and especially interesting to those who would study the topography of E. Switzerland.

Another way from Weissbad, said to be rather more difficult, keeps along the stream of the Schwendibach to the little lake called *Seealpsee*, then mounts by the l. bank of the torrent to the Oehrli, and thence reaches the E. base of the great snow-slope near the Wagenlücke. It is possible to descend from the Wagenlücke to Wildhaus or to Alt St. Johann (Rte. G) in the Toggenburg: for this expedition a guide is indispensable. The northern and lower peak of the Sentis is called *Gyrenspitz*, from the belief that the great vulture of the Alps—lämmergeyer—builds there. There have been some accidents on this mountain. A servant accompanying a Swiss engineer was struck dead by lightning in 1832, and his master severely injured. In 1801, Prof. Jetzeler of Schaffhausen was killed by falling from the rocks.

The Alte Mann (7,987′), the second in height of the Sentis group, may be reached from the pass leading by the Kray Alp to Wildhaus (Rte. L).

Route E.

ST. GALL TO ALTSTÄDTEN.

Two carriage-roads lead from St. Gall to Altstädten, traversing the Canton Appenzell: the first is the shorter, but the second is on the whole more interesting.

1. By *Trogen*. 6 m. to Trogen—6 m. thence to Altstädten.

The road to Trogen mounts due E. from St. Gall along the S. base of the Freudenberg (Rte. A), passing the Convent of Notkersegg and the Inn of Kursegg, and in about 3½ m. reaches the ridge of the *Vögelisegg*, a hill commanding a beautiful view of the Alps and the L. of Constance. There is a good country Inn (zur Taube) at the top, near the high road. The ground is memorable for one of the early victories of the Appenzell mountaineers over the regular forces sent against them by the Abbot of St. Gall. A short descent from the summit leads to *Speicher* (Inn: Löwe), a thriving prettily-situated village; thence is but 1½ m. to Trogen (Rte. D). A good road leads from Trogen to Altstädten (Rte. C), passing the ridge called *Ruppen*, whence there is a fine view of the Rhine valley. Omnibuses ply between Speicher and Trogen and the rly. station at Altstädten.

2. *By Gais*. 8¼ m. to Gais—5¼ m. thence to Altstädten. A good new

road mounts about due S. from St. Gall by the W. side of the Bernegg, passing all the way amidst charming scenery. The old road over the Teuferegg is 1 m. shorter, but fit only for pedestrians. In 4 m. by the new road the traveller reaches *Teufen* (Inn: Hecht), one of the most attractive of the Appenzell industrial villages (2,742′). Just outside the village is an Inn (zum Linde) frequented for the Molkenkur.

A short descent leads from Teufen to the rt. bank of the Rothbach. Here a path bearing a little E. of S. leads in 1½ hr. to Appenzell. The road ascends the valley to Bühler (Inns: Bar, Hirsch), another prosperous village. A pretty fall of the *Rothbach* is passed on the rt. before reaching the point where the road to Appenzell (Rte. D) turns to the rt., ½ m. from Gais.

The road from Gais to Altstädten mounts gently to the ridge of the Stoss, and from the summit gains a very fine view over the Rhine and the Vorarlberg mountains. The chapel that marks the summit of the ridge (3,117′) commemorates the surprising victory gained in 1405 by 400 Appenzellers, under Rudolph of Werdenberg, over an Austrian force more than ten times their number. The appearance of the women of Gais, dressed and armed as men, is said to have decided the conflict wherein the victors lost 20, and the defeated army 900 men. Altstädten is reached in about 4 m. from the summit of the ridge.

Route F.

WEISSBAD TO THE VALLEY OF THE RHINE.

There are several ways by which a traveller can reach the Valley of the Rhine from Weissbad or Appenzell. The shortest and easiest, but the least interesting, of these is by *Eggerstanden*. By that way the Oberried station is reached in less than 3 hrs. from Appenzell or Weissbad. Far more interesting are either of the two ways here described.

1. *To Rüti, by the Kamor.* 3½ hrs.; or 4 hrs. to Oberried.

Passing the village of Brüllisau, a path mounts from Weissbad somewhat S. of E. to a depression in the ridge connecting the *Kamorspitze* (5,748′) with the *Hohe Kasten* (5,902′). The *Kamor Pass*, reached in 2 hrs., is about 5,300 ft. in height. It commands an extensive view, but this is much improved by ascending either of the above-named summits, both of which are easy of access even to ladies. The Hohe Kasten has been called the Rigi of Appenzell, and though it has no pretensions to rival the view from that famous mountain, is yet well deserving of a visit. There is a tolerable mountain Inn near the top, which may be reached in 2½ hrs. from Weissbad.

The descent from the pass into the Valley of the Rhine may be made in 1½ hr. nearly direct to Rüti. The short way lies over slippery grass slopes requiring caution. The more frequented track makes a long détour to the NE. before descending to Oberried, reached in about 4 hrs. from Weissbad. At Weissbad the name Kasten is sometimes given to this pass, and another, rather lower, pass on the N. side of the Kamorspitz is called Kamor.

2. *To Haag, by the Saxer Lücke.* 7 hrs., exclusive of halts. A guide is needed as the path is scarcely traced. As far as the Fählensee the way is that followed in going from Weissbad to Wildhaus in Toggenburg, described in Rte. L. Leaving the track that mounts SW. to the Kray Alp, the way to the Rheinthal bears to the l., at first S., and then SE. to the *Saxer Lücke*, or Krinne (5,630′), a gap in the ridge overlooking the Rhine. About 4 hrs, are required to reach this point from Weissbad. The descent into the Rhine valley lies over alpine pastures, which give place to cultivation as the tra-

veller in 2 hrs. from the pass reaches *Sax*, a village about 3 m. from the Haag Station on the rly. between Rorschach and Coire (Rte. C).

Route G.

WYL TO SARGANS, BY THE TOGGENBURG.

	Post Stunden	Eng. miles
Wattwyl . .	4	12
Nesslau . . .	3	9
Alt St. Johann .	2½	7½
Wildhaus . .	1	3
Haag . . .	3	9
Sargans (by rail) .	4¼	13
	17¾	53½

The upper valley of the *Thur*, known in this part of Switzerland as the *Toggenburg*, is a wide trough between the Sentis and Churfirsten mountains. In its downward course the stream bears gradually to NE., and finally flows nearly due N. from Wattwyl to *Wyl*, a small town just half-way between Winterthur and St. Gall, noticed in Rte. A. The Toggenburg, lying altogether in the Canton St. Gall, is a populous and flourishing district, combining agriculture and pasturage with manufacturing industry. There are many spinning-mills, and works for printing and dyeing cotton.

For some miles from Wyl, the road, passing at some distance from the l. bank of the Thur, is not very interesting. Near Bütschwyl the stream forms a fine fall in a gorge called Im schönen Guckel. At *Dietfurt* (1,968′) the road crosses to the rt. bank, and traverses Lichtensteig and Wattwyl (Rte. B). Henceforward the scenery is richer and more picturesque. *Kappel* and *Ebnat* (Inn: Krone) are large and prosperous-looking places. Near Krummenau the road keeping to the rt. bank passes close to a spot where the Thur passes under a natural rock bridge, known as the Sprung. At Neu St. Johann, a former dependance of the Abbey of St. Gall, suppressed in 1798, is now a cotton-mill. Less than a mile farther is—

Nesslau (2,468′), with a good country Inn (Krone), a large village at the junction of the Lauternbach with the Thur. This is a good centre for several excursions described in Rtes. H, I, and K. Above Nesslau the valley assumes a more alpine character; the mountains on either hand are higher, and approach nearer to the Thur. Beyond the confluence of the Weisse Thur with the main stream is the village of Stein, where the road crosses to the l. bank, and soon after passes below the ruined Castle of *Starkenstein*. Henceforward the direction followed is nearly due E.

Alt St. Johann (Inn: Rössli) is picturesquely situated (2,920′) amidst green meadows surrounded by forests, and in sight of the higher summits of the Sentis and Churfirsten. Soon after quitting the village, the principal torrent of the Thur descends from the NE. into the main valley from a glen that originates in a hollow between the Sentis and the Alte Mann. At 31½ m. from Wyl the traveller reaches

Wildhaus (3,613′), the last village in Toggenburg. It is one of the most attractive places to a mountaineer in this district, but the accommodation at the two Inns (Sonne; Hirsch) is decidedly inferior to that at Weissbad (Rte. D). 'The supply of provisions is scanty and indifferent in quality' [J. E. M.]. The position of Wildhaus between the *Schafberg* (7,824′) to the N., and the highest peaks of the Churfirsten to the S., is very picturesque. A small wooden house, black with age, said to have given birth to Zwingli, is shown to strangers in the adjoining hamlet of *Lisighaus*. From the Wildenburg, a ruined castle ¼ hr. from the village, there is a fine view extending to the Vorarlberg mountains to the E. A better view of the Rhine valley is gained from the *Sommerikopf* (4,517′), about 1¼ hr. E. of the village. The ascent of the Sentis from this side is shorter than from Weissbad (Rte. D), but should not be undertaken without

a guide. The paths to Weissbad and Wallenstadt, described in Rtes. L and M, are interesting to the mountaineer.

A short way from Wildhaus is the watershed between the Thur and the Rhine. A long descent leads down to *Gams*, and then, by a straight line of road planted with trees, to the rly. station at *Haag*. The rly. to Sargans is described in Rte. C. The pedestrian may follow a char-road to the rt. from Gams, and, passing Grabs, join the high road to Sargans at *Werdenberg*, close to Buchs, the next station on the rly. S. of Haag.

Route H.

NESSLAU TO ST. GALL, BY URNÄSCH.

	Hrs' walking	Eng. miles
Krätzernwald	2	5½
Urnäsch	2	5½
Hundwyl	1½	4½
St. Gall	2¼	6½
	7¾	22

This Rte. is practicable only on foot, though here and there portions of the way are passable for chars. Those who prefer a carriage may go from Urnäsch by a hilly road to Waldstatt and Herisau (Rte. B), 2¼ stunden — and thence to St. Gall, 1¾ stund., by road or rly.

A char-road mounts from Nesslau (Rte. G) through the lower part of the glen of the Lauternbach as far as *Reitbad*, where the mineral waters are frequented by the country people of the Toggenburg. By following up the glen to its head, the traveller would reach the W. base of the Sentis. The track leading to Urnäsch bends gradually to N., mounting the ridge called *Krätzernwald*, forming the division between the Cantons St. Gall and Appenzell. The descent lies through the pretty glen of the Urnäsch torrent, which towards its head is sometimes called Rossbach. Half-way in the descent is the *Rossfall*, a waterfall that attracts many visitors. There is a small Inn close at hand. On the mountain to the W. is a small entrance to a cavern called Fläscherhöhle, of no great dimensions, but sometimes made the object of an excursion.

Urnäsch (Inns: Krone, Rössli, Ochs) is often cited as the best specimen of a Swiss village in a prosperous pastoral district. The houses are widelyscattered over green meadows, about 2,750 ft. above the sea, and the pastures, which nourish remarkably fine cattle, cover the slopes of the neighbouring mountains. An annual festival celebrated here (in August?) is famous in this part of Switzerland. The most interesting way to St. Gall, by Hundwyl, leaves the carriage-road leading to Waldstatt and Herisau a short distance from the village, crosses to the rt. bank of the Urnäsch, and follows a rough char-road to

Hundwyl (Inns: Krone; Ochs; Bär; rough but clean country inns). The streams in this neighbourhood have excavated very deep channels in the rocks; many of them afford very picturesque points of view, but cause some trouble to the pedestrian. [From Hundwyl to Gonten (Rte. I) is an agreeable walk of 1¾ hr., passing over a hill called Hundwyler Höhe (4,359′), with a small Inn at the top.] The way to St. Gall is by the village of *Stein*, where a cavern called Fuchsloch, opening on the ravine of the Urnäsch, deserves a passing visit. The way now lies across one of the deepest of the ravines above spoken of, called Zweibrücker Tobel, from two bridges that cross the Sitter. A rough wooden staircase enables foot-passengers to mount the steep sides of the ravine, and in 1 hr. more to reach St. Gall.

Route I.

NESSLAU TO WEISSBAD.

The traveller has a choice of two ways between Nesslau and Weissbad. The first and most direct is a walk of 5 hrs.; by the second he reaches Urnäsch in 4 hrs. on foot, and then takes the road by Gonten and Appenzell, a distance rather exceeding 9 m.

1. *By the Schwäg Alp.* At the summit of the ridge of the Krätzernwald (Rte. H), the traveller, instead of descending the glen of the Urnäsch, bears to the rt., a little N. of E., to the Schwäg Alp, an alpine pasture at the NW. foot of the Sentis. A very agreeable path above the rt. bank of the Weissbach leads to the Boters Alp, and thence by the Leuerfall (Rte. D) to Weissbad, easily reached in 3 hrs. from the summit of the ridge.

From the Leuerfall the traveller may mount the ridge on his rt. to the Ebenalp, and descend to Weissbad by the Wildkirchli (Rte. D); but a guide would be necessary, and the détour would lengthen the way by 1½ hr.

2. *By Urnäsch and Gonten.* At Urnäsch, which is reached from Nesslau by the path described in the last Rte., a carriage-road turns to the E. and mounts gently to Gonten. Before reaching the village it passes by a bathing establishment called *Jacobsbad* (2,900′), opened within the last few years. [From hence the pedestrian may in 1¾ hr. ascend the *Kronberg* (5,382′), commanding a very fine view, and descend in about the same time along the E. ridge of the mountain to Weissbad.] About 1 m. beyond Jacobsbad is the village of *Gonten* (Inn : Bär), and 1½ m. farther Bad Gonten, said to be well kept and tolerably comfortable, where a strong chalybeate spring attracts visitors. The waters are taken internally, and also used for baths. Nearly 2 m. farther, about 7 m. from Urnäsch, the traveller reaches Appenzell, where the road, turning S.E., soon reaches Weissbad (Rte. D).

Route K.

NESSLAU TO WESEN. ASCENT OF THE SPEER.

The Speer is deservedly visited by many travellers from Wesen on the L. of Wallenstadt, as it offers one of the finest alpine panoramas to be found in NE. Switzerland. Immediately overlooking the Lake of Wallenstadt, the spectator enjoys a sufficiently near view of the Tödi chain in the background, with the Glärnisch and other fine mountains in the middle distance. When practicable, it is a better plan to ascend the mountain from the N. side, and to descend thence to Wesen. The ascent may be made from Ebnat (Rte. G), mounting due S. by a lateral glen called Steinthal to the ridge E. of the summit in the same time as from Nesslau. The latter place lies more directly in the way of those approaching the L. of Wallenstadt from Appenzell, and has a better Inn. A second way to Wesen, here described, is very beautiful, and the views not much inferior to those from the Speer, while it is decidedly less fatiguing. For all but experienced mountaineers it is advisable to take a guide on these expeditions. The geological structure of the Speer is remarkably similar to that of the Rigi (§ 26, Rte. B).

1. *By the Speer.* 5½ to 6 hrs.—When the route is taken from Wesen, which lies 1,000 ft. lower than Nesslau, fully ½ hr. more time must be allowed. The easiest and most frequented way from Nesslau is by the glen of the Weisse Thur, which, as mentioned in Rte. G, joins the Thur about 2 m. above the village. The way lies to the l. bank of the stream, winding round the base of the *Blaskopf* (4,743′) to the pastures called Im Laad. Thence mounting by the l. bank of the Weisse Thur, the traveller, after passing the Herren Alp, reaches the ridge E. of the Speer in about 3 hrs. An inn is being built near the summit at the *Ober Käseren Alp*, where it is well to take a boy to

show the way to the top (6,417′). This lies along a rather sharp ridge, with steep and somewhat slippery slopes of grass requiring caution. Nearly 1 hr. is required for the ascent from the châlets. A shorter way from Nesslau, said to be more fatiguing, mounts SW. in a nearly direct line by the N. side of the Blaskopf. It is necessary to return from the summit to the Ober Käseren Alp. The way from thence to Wesen is so well traced that a guide is quite unnecessary. The descent to SSW., rather rapid but nowhere difficult, passes the châlets of the Matt Alp. If pressed for time, the traveller may reach Wesen in little more than 1½ hr., but the beautiful views constantly before him during the descent should induce him to linger somewhat on the way. It is said that an Inn is to be opened somewhere on the mountain, probably at the Ober Käseren Alp, but the Editor has not learned that this has actually occurred.

2. *By Amden.* About 5 hrs.—The chief summits in the range connecting the Speer with the Churfirsten, reckoning from W. to E., are the *Mattstock* (6,400′), the *Gulmen* (5,873′), and the *Fliegenspitze* (5,610′). Two ways may be taken from the valley of the Thur to Amden: the first, which is the most direct from Nesslau, is by the depression between the first and the second of the above-named summits, and is reached from the Alp Im Laad by crossing the stream of the Weisse Thur, and mounting at first due S., then about SSW., to the pass. The descent to the village of Amden (§ 27, Rte. C), and the path along the cliffs from thence to Wesen, present a succession of exquisite pictures. The pass called *Auf der Höhe* (5,056′), lying between the Gulmen and the Fliegenspitze, is the most direct for those approaching Wesen from Wildhaus or Alt St. Johann. It may be reached by a path turning off a little E. of the Castle of Starkenstein, or from the village of Stein, a little lower down the valley of the Thur.

Route L.

WILDHAUS TO WEISSBAD, BY THE KRAY ALP.

About 7 hrs., exclusive of halts.

This is an interesting walk, in parts very steep, but it cannot be called difficult. An active mountaineer may easily combine with the day's walk the ascent of the Alte Mann. A steep and continuous ascent leads NNE. from Wildhaus in about 2½ hrs. to the châlets of the Kray Alp, passing on the way the Tesel Alp. In some places the ascent is made by steps hewn in the live rock. The *Kray Alp* is more than 6,000 ft. above the sea, and is said to offer many rare plants to the botanist. In ½ hr. the traveller may mount to the *Scheidegg Pass* (about 7,000′) between the Schaffberg (7,824′) and the Alte Mann (7,987′). The ascent of the latter peak may be made from this point, but is said to be decidedly difficult—more so than that of the Sentis. Snow usually lies on the N. side of the Scheidegg. The descent is made to the NE. into a wild alpine hollow, with a small lake—*Fählensee* (4,764′)—lying in the bottom. The popular fancy has peopled this solitary wilderness with goblins and troubled spirits. From this upper shelf of the glen of the Brühlbach the traveller scrambles down by a mere goat-track to the lower level of the Sämtiseralp, where a larger lake, the *Sämtisersee* (3,980′), furnishes good trout for the visitors to Weissbad. It has no visible outlet, but feeds by a subterranean channel the *Brühlbach*, which comes to light in a deep ravine some way lower down. After a steep descent into the ravine amidst rocks abounding in fossils, the path following the stream turns abruptly to NE., at rt. angles to its previous direction, and soon reaches the village of *Brüllisau*, 1½ m. from Weissbad.

In fine weather most mountaineers going from Wildhaus to Weissbad, or

vice versâ, will be tempted to take the summit of the Sentis on their way between those places. A notice of the ascent is given in Rte. D. In going from Wildhaus it is necessary to take a guide to the summit; but after returning from thence to the Wagenlücke, a practised mountaineer will not have much difficulty in finding his way down to the Meglis Alp, and may send his guide back to Wildhaus.

Route M.

WILDHAUS TO WALLENSTADT, BY THE CHURFIRSTEN.

6 hrs.' walk.

The ridge of the Churfirsten is attractive to the mountaineer from the steep and rugged forms of its summits, connected together by narrow crests of rock that are in most places very difficult of access. As there is no well-traced path leading from Wildhaus to Wallenstadt, and the descent on the S. side is in many places impossible, a traveller going without a guide is liable to get into serious difficulties. The course here indicated, and others that might be suggested, in the range lying S. of the Toggenburg, are interesting to the sportsman and the naturalist from the fact that he may here approach more nearly to many wild animals than is usually possible elsewhere in the Alps. The whole range, extending from the Gonzen over Sargans to the Speer, is declared by a cantonal law to be Freiberge, i. e., a district wherein all persons are prohibited under heavy penalties from killing wild animals. The animals are preserved, not for the amusement of a privileged class, but for the purpose of protecting the species commonly sought as game from the gradual destruction that seems to await them in other parts of the Alps. The effect has been not only to make chamois, ptarmigan, and other game common, and far less shy than usual, but to favour the increase of other wild animals, amongst which the ornithologist may observe many rare birds.

The way from Wildhaus mounts steeply about due S. to the *Käserruck*, a point in the ridge of the Churfirsten a little E. of the *Scheibenstoll* (7,556′), the highest of the range. Instead of descending directly to Wallenstadt, the traveller who wishes to see more of these mountains may follow a cattle-track that is carried about the mid height of the range, passing from the chalets (*hütten*) of Lösis over Wallenstadt to those of Rüls, Tschingel, Schrienen, and Sels, whence he may descend to *Quinten*, the solitary village on the N. side of the lake, and reach Wesen or Wallenstadt by boat. This tour is sometimes made from Wallenstadt. See § 27, Rte. C.

The Editor has not seen any notice of the ascent of the Faulfirst (7,916′) E. of Wallenstadt. But little lower than the Sentis, it is in some respects more favourably situated for a view of the Grisons Alps.

CHAPTER IX.

LEPONTINE ALPS.

Section 29.

FORMAZZA DISTRICT.

Route A — Obergestelen to Domo d'Ossola, by the Gries Pass . 247
Route B — Formazza (Andermatten) to Airolo, by the Passo di San Giacomo 250
Route C — Viesch to Formazza (Andermatten), by the Albrun Pass and Lebendu 251
Route D — Viesch to Premia, by the Binnenthal 253
Route E — Viesch to Isella, by the Ritter Pass 254
Route F — Isella to Premia, by the Val Cherasca 256

Section 30.

ST. GOTHARD DISTRICT.

Route A — Fluelen to Bellinzona, by the St. Gothard Pass . . . 259
Route B — Excursions from Amsteg — Ascents of the Great and Little Windgelle and the Bristenstock . . . 269
Route C — Hospenthal to Obergestelen, by the Furka Pass . . 271
Route D — Obergestelen to Airolo, by the Nufenen Pass . . . 273
Route E — Airolo to Andermatt, by the Val Canaria 274
Route F — Dissentis to Bellinzona, by the Lukmanier Pass . . . 274
Route G — Dissentis to Airolo, by the Passo dell' Uomo . . . 278

Section 31.

ADULA DISTRICT.

Route A — Coire to Bellinzona, by the Bernardino Pass — Via Mala 280
Route B — Hinterrhein to Val Blegno — Ascent of Piz Valrhein . 287
Route C — San Bernardino to Roveredo, by Val Calanca . . . 292
Route D — Trons to Olivone, by the Greina Pass 292
Route E — Ilanz to Olivone, by the Vrinthal 294
Route F — Ilanz to Olivone, by the Zavreila Thal 298
Route G — Ilanz to Hinterrhein, by the Valserberg 300
Route H — Reichenau to Splügen, by Savien and the Löchliberg Pass 301

Section 32.

LOCARNO DISTRICT.

Route A — Bellinzona to Arona, or Sesto Calende, by the Lago Maggiore 304
Route B — Locarno to Faido, by Val Verzasca 308
Route C — Locarno to Airolo, by Val Lavizzara 309
Route D — Locarno to Airolo, by Val Bavona 311
Route E — Locarno to Andermatten in Val Formazza 314
Route F — Locarno to Premia, by Val Rovana 315
Route G — Locarno to Domo d'Ossola by Val Onsernone . . 315
Route H — Locarno to Domo d'Ossola, by Val Vigezzo . . . 316
Route I — Canobbio to Domo d'Ossola, by Val Canobbina . . 317
Route K — Pallanza, or Intra, to Domo d'Ossola, by Val Intrasca . 317

Section 33.

COMO DISTRICT.

Route A — Coire to Como, by the Splügen Pass 319
Route B — Colico to Milan, by Lecco . 330
Route C — Bellinzona to Como, by Lugano 333
Route D — Campo Dolcino to Mesocco . 336
Route E — Chiavenna to Roveredo . . 336
Route F — Gravedona to Bellinzona . 337
Route G — Luino to Menaggio, by Lugano 337
Route H — Argegno to Osteno, by Val Intelvi — Ascent of the Monte Generoso . . . 339
Route I — Laveno to Como, by Varese . 343
Route K — Bellagio to Erba, by Val Assina 344
Route L — Como to Lecco, by Erba . 345

Between the eastern extremity of the chain of the Pennine Alps and the principal range of the Rhætian Alps, dividing the valley of the Inn from the Val Tellina, the main chain of the Alps is far from showing that regularity of direction which characterises the central chain described in the two preceding chapters of this work, that, with a single break, traverses Switzerland from the Lake of Geneva to the Valley of the Rhine near Coire.

If we follow the line marking the division of the waters that flow into the Po from those that feed the Rhone or the Rhine, we find that it describes a somewhat irregular curve, convex to the N., from the Simplon Pass to the neighbourhood of Chiavenna. With the single exception of the Monte Leone, overlooking the pass of the Simplon, the summits of this portion of the chain are much inferior in height to those of the Swiss chain; but two peaks of the Adula group exceed 11,000 ft. in height.

The extensive region lying between the chain that forms the natural frontier of Italy and the plains is occupied by mountain ranges whose summits sometimes rival in height those of the dividing ridge, and which are cut through by deep valleys, three of which converge in the basin of the Lago Maggiore, the longest and deepest of all the lakes of the Alps. The most important of these valleys is the Val Leventina, or Upper Valley of the Ticino. This has been known from a remote antiquity, owing to the fact that it leads to the Pass of St Gothard, one of the easiest lines of communication between Italy and the N. of Europe. The designation Lepontine Alps, derived from the Latin name of the valley, has long been somewhat vaguely applied to the Alpine ranges that enclose it. Since geographers have felt the need of fixing more accurate limits for the subdivisions of the Alpine chain, the term has been usually applied to the portion of the main chain extending from the Simplon to the Bernardino Pass, with the various ramifications extending from it to the southward. The writer would have willingly adhered to the limits thus established if he did not feel it to be impossible to separate from the remainder of the Canton Tessin the portion lying between the Lakes Maggiore and Como, while it is at the same time apparent that the line followed by the road of the Splügen, nearly due S. from Reichenau to the L. of Como, affords a more natural division between the Lepontine and the Rhætian Alps than that of the Bernardino. Whichever line be adopted as the limit is open to the objection that by throwing the mountain ranges W. of the Valley of the Rhine into the Lepontine Alps, it separates from the Rhætian Alps valleys once inhabited by the Rhæti. This is but a form of a difficulty constantly encountered by the geographer. When he regards the form of mountain ranges, he is forced to take for his boundaries the valleys and depressions by which one group is separated from another; when he attends to political divisions, he finds that these usually follow the crests of the mountain ranges, inasmuch as the human race, as well as most species of wild animals and plants, has spread without difficulty through the valleys, while the ridges have often opposed an insuperable barrier to further extension.

Adopting as the limits of the Lepontine Alps the breaks in the main chain corresponding to the passes of the Simplon and the Splügen, we shall in this work divide the region so limited into five districts, whose boundaries are hereinafter defined.

While several portions of the region included in this chapter are the frequented haunts of tourists, others, scarcely, if at all, inferior in natural attractions, are amongst the most neglected districts in the Alps. The writer has personally visited several little-known valleys, but there are others with which he is not acquainted, and as to which he has failed to procure any reliable information.

SECTION 29.

FORMAZZA DISTRICT.

THE high range, unmarked by any prominent peaks, lying on the l. hand of the traveller descending from the Rhone Glacier to Brieg (§ 24, Rte. C), divides the Upper Valais from the head waters

of the Tosa, Toccia, or Toee, that flow into the Lago Maggiore near Baveno. The valley of the Tosa is called towards its head *Val Formazza*; in its middle portion, *Val Antigorio*; and at its lower end—after reeeiving the Diveria from the Simplon Pass—*Val d'Ossola*. It is this valley with its tributaries, and the range dividing it from the valley of the Rhone, that is deseribed in the present seetion. The part of the chain of the Lepontine Alps here ineluded lies between the Simplon (§ 21, Rte. A) and the Gries Passes.

The neighbourhood of the Oberland Alps, and of the great glaeiers that they send down towards the Rhone, has doubtless contributed to divert the attention of travellers from the less remarkable range on the opposite side of the Rhone valley. Within the limits here fixed this extends parallel to the axis of the Bernese Alps, and exhibits very distinctly the tendeney to parallel longitudinal ridges whieh was remarked in the introduction to § 24 as eharacteristie of a part of the Oberland Alps. The reeurrenee of alpine streams flowing parallel to the axis of the range indieates on the map this disposition of the mountain masses. The faet that a line drawn from Niederwald in the Valais to the Val Antigorio above Premia traverses in suceession five parallel ridges, separated by eorresponding glens, ean seareely be attributed to the aetion of meehanieal eauses independent of the original upheaval of the range.

There is no plaee in this distriet that offers mueh indueement to the mountaineer to seleet it as head-quarters. The lateral valleys on the Swiss side may be visited from Vieseh or Münster, and there is a new inn elose to the Falls of the Tosa whieh is well spoken of, and well plaeed. A mountain Inn at the head of the Val Cherasea could not fail to attract travellers, but this is a desideratum not yet likely to be supplied.

Excluding the outlying peak of the Monte Leone, which has been noticed in conneetion with the Simplon Pass, the range from the Wasenhorn to the Gries Pass presents no prominent peaks, and no deep depressions.

The higher points all lie between 10,000 and 11,000 English feet, and the lowest pass—that of the Albrun—does not fall below 8,000 ft. The highest summit is the Blinnenhorn (10,932′), at the head of the lateral valley of the same name.

Route A.

OBERGESTELEN TO DOMO D'OSSOLA, BY THE GRIES PASS.

	Hrs.' walking	Eng. miles
Gries Pass	3	7½
Falls of the Tosa	3	7
Andermatten	1½	4½
Premia	3½	10
Crodo	1½	4½
Domo d'Ossola	3	9
	15⅓	42⅓

This pass is praetieable for mules or horses. Fully 11 hrs., exelusive of halts, should be allowed from Obergestelen to Premia; and when the pass is taken from the Italian side 12 hrs. must be reekoned, as the aseent is greater by 1,800 ft. There is a good earriage-road from Premia to Domo d'Ossola. Ladies should not eount on finding suitable horses or mules, but there is nothing else to prevent them from taking this line, which affords a very interesting route into Italy, with a first-rate waterfall, and some noble seenery on the way.

Obergestelen (Inn: Cheval Blanc, good), noticed in § 24, Rte. C, is the ehief village at the upper end of the valley of the Rhone, about equidistant from the sourees of the Aar, Reuss, Tieino, and Tosa, and the plaee where the paths leading from the valleys of those streams converge. The Gries Pass is reaehed through the *Eginenthal*, drained by a torrent that joins the Rhone at *Ulrichen*, nearly 1½ m. below Obergestelen. The pass may be taken from Münster, nearly 3 m. lower down

the main valley, allowing ½ hr. more time for the ascent to the pass from that village. A traveller starting from Viesch some time before daylight, and taking a char to Ulrichen, would have time to reach the Val Formazza, if not Premia, on the same day. Except in very settled weather, it is unadvisable to attempt this pass without a guide. Three tourists, surprised by a snow-storm, were lost on the glacier in 1849.

The hamlet called Im Loch, at the opening of the Eginenthal, is reached from Obergestelen by a track along the l. bank of the Rhone, and is connected with Ulrichen on the opposite bank by a wooden bridge. A short way above the hamlet the track crosses to the l. bank of the Eginenbach by a bridge 4,600 ft. above the sea, near to a pretty waterfall. A steep ascent through a larch forest leads to the upper level of the valley. The torrent forms another fall above the forest, and several others farther on. The Eginenthal is a wild stony valley, not interesting in its scenery, but it is not tedious, for in less than 2 hrs.' steady walking from Obergestelen the traveller reaches a stone bridge where the torrent is crossed for the last time. A little higher up are the last châlets at this side of the pass, called Altstaffel (6,585′), to distinguish them from several others scattered over the stony slope. These lie in a rugged basin, surrounded by mountains between 9,000 and 10,000 ft. in height, and the extremity of the Gries Glacier is seen at the head of a depression in the range to the S.

A little above these châlets the main branch of the Eginenbach is seen to descend from a glen that opens to SW. at rt. angles to the lower course of the stream, and parallel to the Rhone valley.

[Near the head of this glen are the châlets of the Fischthal Alp at the unusual height of 7,700 ft., and higher still is a small lake (8,530′). There would apparently be no difficulty in traversing the ridge W. of this lake and descending to the Rhone near Münster through the *Merzenthal*, a short glen (closed at its head by a small glacier), respecting which the Editor has no information. The circuit might be made in an easy day's walk from Münster, and if favoured by weather the traveller might doubtless gain a very fine view of the Oberland Alps from the *Brodelhorn* (9,187′), rising W. of the above-mentioned lake.]

The ascent to the *Gries Pass* lies up the steep slopes S. of the Altstaffel, while the way to the Nufenen (§ 30, Rte. D) is about due E. A full hour is required for the ascent to the highest point of the pass—about 8,050 ft. Here the traveller sees the *Gries Glacier*, a considerable ice-field, about 4 m. long and 1 m. broad, stretching before him to SW. with a gentle upward slope to the foot of the *Blinnenhorn* (10,932′). This glacier is in many respects remarkable, and deserves more attention than it has yet received. It is formed in a trough between two parallel ridges of about equal height, of which the NW. ridge culminating in the *Merzenbachschien* (10,532′) belongs to the Valais, while the SE. ridge, extending from the Blinnenhorn to the summit immediately N. of Bettelmatt, forms the boundary between Switzerland and Italy. The Gries Glacier deserves to be called an ice-lake rather than an ice-stream ; the annual outflow is very trifling, but it seems to feed three, if not four, different streams—the Eginenbach and Blinnenbach, tributaries of the Rhone ; the Griesbach, one of the sources of the Tosa ; and it appears besides to send a short branch into the head of the Val Corno, supplying a feeder to the Ticino. If it be possible to ascend from the head of the Blinnenthal, which opens into the Rhone valley at Reckingen below Münster, to the snow col between the Blinnenhorn and the Merzenbachschien, the height of which is marked 9,898 ft. on the Federal Map, there will be no difficulty in descending along the Gries Glacier and joining the beaten track at the top of

the pass. The excursion must lead through new and interesting scenery.

From the rocks whence the traveller has viewed the Gries Glacier, and which afford a very fine view of the Oberland Alps, it is necessary to descend a few feet in order to traverse the ice, here usually quite free from crevasses. The way lies about due S., and is marked by stakes planted here and there in the ice. The S. bank of the glacier is gained in 20 min., and the traveller sees below him the head of the *Val Formazza*, backed by the range that separates it from the Val Maggia, whose most conspicuous summit is the Basodine (10,748′). The descent toward Italy is longer and steeper than on the Swiss side. The head of the Val Formazza has a bare aspect, from the absence of timber and the uniformity of the slopes. As very commonly happens in valleys where the rock is crystalline slate of various degrees of hardness, the upper portion forms a series of steps, or small *plateaux*, divided by steep and rough slopes. All the projecting surfaces of rock bear traces of the passage of ice. Four of these steps are traversed in descending from the pass. The highest is occupied by the châlets of Bettelmatt; the next châlets, reached by a path on the l. bank, which returns to the rt. bank lower down, are called Morast. The third plateau, reached by the track which here keeps to the rt. bank, is more extensive, and has several scattered groups of châlets. Here the *Tosa*, also called Toccia and Toce, is formed by the union of the torrents that fall into the head of the valley. In descending from the third to the fourth and lowest plateau, the path, which has returned to the l. bank, lies close to a remarkably fine waterfall, where the traveller willingly halts awhile to enjoy the varied effects produced by a group of cascades which are here brought together into a single picture. If prepared by some over-coloured descriptions to expect a very large body of water, he will infallibly be disappointed, as in this respect the *Tosa Fall* is surpassed by the Handeck, and by several others that might be named in the Alps. The group of châlets above the fall is called Auf der Fruth, and those below it—about 800 ft. lower—Unter Fruth. A new inn opened here in 1864 is the best place to stop at in the upper valley, and deserves encouragement. The first hamlet is *Fruthwald*, often written Frutval; to this succeed in rapid succession Gurflen (Ital., Grovello), Zum Steg (Ital., Al Ponte), and *Pommat*. The latter is the largest hamlet, and has a rough country Inn; but rather better quarters are found nearly ½ hr. lower down the valley, at

Andermatten (4,078′). The Inn (Rössli) is improved, and has been well spoken of by several recent travellers, but there have been some complaints of imposition and extortionate charges. This, along with the other hamlets above mentioned, forms the commune of *Formazza*. Those who enquire for a village of that name are sometimes sent here, where there is the principal church; sometimes to Pommat. The population is mixed; the German element, said to be derived from Bernese immigrants, predominates towards the head of the valley. Nearly all proper names have a German as well as an Italian form, and the Italian dialect spoken in the valley, even down to the neighbourhood of Domo d'Ossola, includes many words of German origin not easily recognised by a stranger.

If the accommodation here were satisfactory, this place might afford interesting quarters for a mountaineer and a naturalist. Besides the Rte. here described, this is the place of meeting of the paths from the Albrun (Rte. C) and St. Giacomo (Rte. B) Passes. More interesting than either of these are the Bocchetta di Val Maggia and the Forcolaccio, two passes leading to the Val Bavona, in the Canton Tessin, noticed in § 32. The summit being covered with clouds when the writer passed this way, he is unable to form

an opinion whether the fine peak of the Basodine (§ 32, Rte. D) may be accessible from this side.

The Val Formazza terminates at *Foppiano*, or Unterwald, about 3 m. below Andermatten, where a path to the E. leads over the Criner Furke to Cevio and Locarno (§ 32, Rte. E). The rough paved track that henceforth keeps to the rt. bank of the Tosa is tiresome to the feet after a long walk, but the lover of nature is rewarded for his labour by scenery of extreme beauty and grandeur throughout the descent from Foppiano to Premia. For the greater part of the way the *Val Antigorio* is hemmed in between walls of gneiss many hundred ft. in height, above which the larches that cling to the very edge of the precipice are seen against the sky. Those who have not time to arrive at Premia by daylight should sleep at Pommat or Andermatten if they would not lose the chief object of their visit to this valley. The vegetation assumes a more southern character, and the buildings and the people announce to the stranger his entrance into Italy before he reaches

Premia (2,621′), a rather large village with a country Inn (Agnello) that has been favourably reported on by recent visitors. On the E. side of the valley are several passes leading to the Alpe di Cravairola, at the head of the Val di Campo, one of the branches of Val Maggia. In the opposite direction, a little below Premia, the Devera torrent (Rte. D) descends to join the Tosa.

Below Premia the *Val Antigorio* widens out and exhibits an aspect of richness and animation that affords a marked contrast to the Val Formazza, where everything around announces that the life of man is one of constant struggle and privation.

After passing Cravegna, the next considerable village is *Crodo*, where there is or was a decent Inn. '2 m. below Crodo, 2¼ hrs.' walk below Premia, are the *Baths of Crodo*, a large and well-furnished house, opened 1848: charge en pension 5 frs. a day, baths extra. The establishment is not very well managed, and passing travellers are charged unreasonably. The waters contain iron. A spring rises in the gardens. Carriages and horses may be hired here.'

'Below Crodo the carriage-road crosses the river twice before it reaches San Marco, and then enters the *Simplon road*, at the lofty and beautiful bridge of Crevola, near the new cemetery, at the junction of the Vedro with the Tosa.' [M.]

About 2½ m. below the bridge of Crevola the traveller, in 4½ hrs. from Premia (2 hrs. in a light carriage), reaches *Domo d' Ossola* (Inns: H. de la Ville, tolerably good; H. d' Espagne; H. Albasini, just outside the town, best for those remaining more than a single night), described in § 21, Rte. A.

Route B.

FORMAZZA (ANDERMATTEN) TO AIROLO, BY THE PASSO DI SAN GIACOMO.

7½ hrs.' walking.—A tolerably good horse-track.

This pass is convenient for those who would approach the valley of the Tessin from the SW. by a less beaten track than by the Furca and the St. Gothard Pass. A traveller coming from Domo d' Ossola or the Lago Maggiore may reach Andermatten on the first day, and on the next arrive early at Airolo. If he should be coming from Viesch, he may either go direct to the Val Formazza by the course indicated in Rte. C, or else reach Premia by either of the passes mentioned in Rte. D, and arrive at Airolo after a second day's long, but not very laborious walk. A far more attractive route may be taken by a mountaineer who would traverse some fine but little known scenery. Turning to the rt. from the ascent to the Passo di San Giacomo, he may gain the upper end of the Val Bavona by the Bocchetta di Valmaggia, and reach

Airolo in one day from Andermatten by crossing the ridge that divides the Val Bavona from the Val Bedretto. See § 32, Rte. D.

Peter Sillig, of Fruthwald, has been recommended as a guide, but none is required for the pass here described by any one used to mountain walking. Immediately above the Tosa Fall the path leading to Val Bedretto begins to mount to NNE. over grassy slopes. It keeps above the l. bank of one of the principal tributaries of the Tosa, through a gently-sloping glen called *Val Toggia*. After a while the path crosses to the rt. bank of the stream, but keeps the same general direction. On the rt. is a little lake, where the track to the Val Bavona ascends to the E. The path now reaches a nearly level plateau, lying between the *Helgiohorn* (9,302′) to NW., and the *Marchhorn* (9,722′) to the E. If clouds come on, the traveller will require to consult his compass, as the path becomes indistinct amidst the numerous cattle-tracks. On approaching the summit of the pass (7,572′) he should lean a little to the rt. or about due NE. The descent is very gentle until, in about ¼ hr. from the pass, or 3½ hrs. from Andermatten, he reaches a small oratory dedicated to St. James, which has given its name to the pass. Here there is a fine view of the peaks of the St. Gothard range on the opposite side of the Val Bedretto, and 1 hr., or even less, suffices for the descent by a path that winds down the slope of the mountain to the little inn at *Hospital all' Acqua* (beds fairly good, but food poor and scanty), on the way from the Nufenen Pass (§ 30, Rte. D) to Airolo. In descending into the Val Bedretto, a very slight détour enables the traveller to visit a pretty waterfall in a pine-forest on the rt. of the path.

Route C.

VIESCH TO FORMAZZA (ANDERMATTEN), BY THE ALBRUN PASS AND LEBENDU.

	Hrs.' walking	Eng. miles
Binn	2⅓	7
Albrun Pass	3½	9
Pommat	5	12½
Andermatten	½	1½
	11½	30

The distances given in this and the following Rte. are merely approximate. The ground is in part very rough and almost trackless, and the Editor has received little information derived from personal experience. The way from Viesch is practicable for horses as far as the summit of the Albrun Pass, and a guide is there unnecessary; but it would be very difficult to find the remainder of the way without one.

The *Binne* torrent, the most considerable stream that joins the Rhone on the l. bank between its source and the junction of the Vispach, is formed by the union of a number of streams originating in upland glens running parallel to the chain dividing the valley of the Rhone from that of the Tosa. Having united their waters near the village of Binn, they flow towards the Rhone in a NE. direction through a cleft cut through the mountain ridge at rt. angles to their former course. On approaching the Rhone the Binne is forced aside by a projecting ridge of no great height, and is turned somewhat S. of E. until it finally pours its waters into the Rhone just where the new road makes a rapid descent between Lax and Möril (§ 24, Rte. C).

The *Binnenthal* is extremely interesting to geologists. Its upper portions form a narrow trough between two parallel granitic ranges, and the secondary calcareous rocks are metamorphosed into a saccharoïd dolomite, containing rare minerals, such as tremolite, idocrase, red and blue corundum, tourmaline, realgar, &c.

The way from Viesch to the Binnenthal descends to a bridge over the Rhone, just below the junction of the Viesch torrent and due S. of the village, and then, leaving on the slopes to the l. the village of *Aernen*, mounts through a pine-forest to the ridge lying in the angle between the Rhone and the Binne. On gaining the summit, whence it overlooks the lower part of the Binnenthal, the path turns to the E. along the slope of the mountain, and in about 1½ hr. from Viesch reaches the hamlet of Ausser Binn (4,364), standing at a considerable height above the Binne. After crossing a torrent that descends from the NE., the traveller enters the defile cut through a ridge that, with this single break, extends from the Hölzihorn to the gorge of the Saltine above Brieg. The path becomes so narrow that laden mules have barely space to pass, and in some places is cut into the rock. At the upper end of the defile is the junction of the two branches of the valley. The opening of the Lang Thal is passed on the rt., while the path, keeping to the rt. bank of the stream, follows the main branch of the Binnenthal, and in 2¾ hrs. (ascending the valley) reaches

Binn (4,784′), the principal village, where there is a poor Inn. Here the path to the Albrun Pass crosses to the l. bank and ascends along the stream towards ENE. to *Imfeld*, the highest hamlet, about 1 hr. above Binn. The larches in this part of the valley are said to be remarkably fine. Imfeld is close to the junction of the main stream, here flowing from the E., with the Feldbach. The latter is divided by the range called *Schweifen Grat*, culminating in the *Hölzihorn* (9,810′), from the glen of the *Rappenthal*, which joins the Rhone a little above Viesch, after describing a course almost exactly parallel to that of the Binnenthal. There seems to be an extensive field of névé, visible from the Æggischhorn, on the E. side of the Hölzihorn, between that summit and the *Mittaghorn* (10,441′), which is partly drained by the *Rappen Glacier*, a small ice-stream flowing into the head of the Rappenthal. It would be an interesting day's walk from Viesch to make the circuit by the Feldbach to the snow-col between the above-named summits, returning by the Rappenthal, and doubtless gaining from the summit a very fine view of the Oberland Alps.

The path to the Albrun Pass returns to the rt. bank of the torrent at Imfeld, and mounts somewhat N. of E., passing in succession several groups of châlets. The head of the valley is closed by the *Ofenhorn*, or Punta d'Arbola (10,728′), a snow-pyramid, one of the highest summits in this part of the main range. After passing the last châlets (7,267′), where the Binne originates in the junction of several streams issuing from the surrounding snow-fields, the path turns to the SE., and in about ¾ hr. mounts a moderately steep slope that leads to the *Albrun Pass*, or Passo d'Arbola (8,005′), the lowest in the main chain between the Simplon and the St. Gothard. It lies between the Ofenhorn and the *Albrunhorn* (9,515′). The view is said by some travellers to be uninteresting ; by others, to be wild and very striking. Here the horse-track bends to the rt. (see next Rte.), while the course to the upper end of the Val Formazza lies to the E. over an extremely wild and rugged granitic plateau, where local knowledge is needed by those who would not run the risk of being benighted. It is necessary to traverse two ridges, each as high as, or higher than, the Albrun, before attaining the pastures surrounding a lake called *Lebendu*, larger than is commonly found at so great a height. Here are some châlets ; a path leads along the N. side of the lake, and then descends by the l. bank of the torrent through a narrow gorge, where it forms a fine waterfall, and in 2 hrs. from the lake reaches Pommat (Rte. A), ½ hr. above Andermatten.

In taking this pass from the Val Formazza, the guide may be sent back as

soon as the traveller has reached the summit of the Albrun Pass. It is prudent to start very early, as the way is long and fatiguing.

There is another way from the Albrun Pass to the Val Formazza, as to which the Editor desires further information. It lies about due E. from that pass, by the N. side of the Businhorn, and by a pass called *Col di Busin*, between that summit and the *Cima Rossa* (9,866′), descending by a small lake, called Lago di Busin, whose torrent falls into the Tosa about 1 m. below Foppiano.

[From the Lake of Lebendu a track leads N. to a pass called *Nuefelgiu*, between the *Hohsandhorn* (10,515′) and the Nuefelgiuhorn, and then descends to the châlets of Morast, near the foot of the Gries Pass (Rte. A). By bearing to the rt. or NW. from the Nuefelgiu Pass, it may be possible to reach the extensive snow-fields between the Hohsandhorn and the Blinnenhorn, from whence the *Hohsand Glacier*, by far the largest of those falling into the Val Formazza, descends to the E., and sends down a glacier torrent that joins the Gries Bach below the châlets of Bettelmatt.]

Route D.

VIESCH TO PREMIA, BY THE BINNENTHAL.

The easiest, but most circuitous, track leading from the Binnenthal to the Val Antigorio is by the Albrun Pass; the best route for pedestrians is by the Col della Rossa: but in addition to these there are several others known to the chamois-hunters of Binn, of which the most interesting is probably that by the Kriegalp Pass. The traveller who undertakes any of these passes from Viesch must count on a walk of 12 hrs.; and if taken from Premia he should allow ½ hr. more for the difference of level between that place and Viesch.

1. *By the Albrun Pass.* The way from Viesch to the summit of the Albrun Pass is described in the last Rte. The distance from Viesch is counted as 6 hrs., but in ascending nearly 7 hrs. must be allowed. From the Pass the horse-track leading to the Val Antigorio, which is but faintly traced, descends at first SE., but bends gradually to the rt.; and on reaching the upland valley that is seen from near the pass the course lies SW., or nearly in the opposite direction to that followed in the ascent from Binn. The valley is rich in alpine pasture, and descends very gently. The track, which keeps to the l. bank of the stream, and lies over swampy ground near a small lake called Codelago, reaches in rather more than 2 hrs. from the pass the pastures of the *Devero Alp.* This is a level grassy plain, probably a filled-up lake basin, beautifully situated at the junction of the Arbola torrent, by which the traveller has descended from the NE., with a stream from the Lago di Buscagna to SW., and many minor streamlets from the surrounding peaks. At the point where the main streams meet to form the *Devera* is a large group of châlets, called *Al Ponte* (6,273′). There was formerly a small mountain Inn here, but it has been closed for some years. Rough accommodation for the night may be found at the châlets.

A paved bridle-track, fatiguing to the feet, descends by the rt. bank of the Devera, crossing and recrossing the stream before reaching the poor village of *Osso*, near the junction of a torrent descending from an upland valley to the N. This is inhabited by a German population whose village, called *Ayer* (Ital., Agaro), has long kept itself as a separate community, maintaining unchanged its local usages and original language. The scenery of the Devera valley is extremely rich and picturesque, especially at a point near Osso where the path crosses a bridge, and passes under a ruined gateway. A little lower down it is carried under the village of *Croveo*, perched on the slope to the l., and finally joins the road from Crodo

to *Premia*, ½ hr. below the latter village.

The tired or benighted traveller may save ½ hr. in his day's walk by halting at *Baceno*, a village on the rt. bank of the Devera, standing near its junction with the main valley, and reached by a bridge near the hamlet of Graglia.

2. *By the Col della Rossa.* This pass leads by a tolerably direct course from Imfeld in the Binnenthal (Rte. C) to the Devero Alp. It is but little higher than the Albrun, but the way is so rough that little time is saved by it. Nearly 4 hrs. must be allowed for reaching Imfeld from Viesch. The track to the Col della Rossa thence keeps to the l. bank of the Binne, and in less than 1 m. turns to the rt. into the opening of a lateral glen that descends from the S.

Two torrents unite close to the opening of the glen: the path follows the western branch, mounting along the rt. bank of the stream. After a while the glen bends to the eastward, and the faintly-marked track no longer follows the stream, but mounts along the slopes about due E. to attain the level of the Geisspfad See, a mountain lake about 7,800 ft. above the sea. The track passes round the N. and E. sides of the lake, and then ascends the ridge to the S., only 300 ft. above its level. This forms the *Col della Rossa* or *Geisspfad Pass*, 8,120 ft. above the sea. 'The top forms a barren rocky plain, bare of snow when we passed, covered with great boulders and pools of water. The way across it is marked by stone cairns.' [L. S.] A mass of serpentine several hundred feet thick lies at the top of the pass, seemingly overlying the gneiss. When seen from the S. side the ridge presents a steep face of rock, with two horns rising like obelisks, between which lies the pass. The descent of the rocks will cause no difficulty to the practised mountaineer; and having reached their base, he follows the l. bank of a little stream that traverses the Devero Alp and joins the route from the Albrun at the châlets of Al Ponte.

3. *By the Kriegalp Pass.* This is said to be the most interesting of the passes from Viesch to Premia. It is reached through the SW. branch of the Binnenthal, more fully noticed in next Rte. From the hamlet of Heiligenkreuz, reached in 3½ hrs. from Viesch, the way lies through a glen opening to SSE., which leads up to the *Kriegalpstock*, a remarkable peak well seen from the Æggischhorn. The pass, which lies on the N. side of that peak, is attained in about 7 hrs. from Viesch. 'The path on the N. side is not difficult, but is ill marked, and might easily be missed without a guide. From the summit there is a steep descent, with rocks on either side, until the head of a gully or ravine is reached, *on the rt. side* of which the descent is not difficult. There is no passage to the l.' [M.] From the base of the gully the way lies somewhat N. of E. Within ½ hr. the traveller reaches the châlets of Buscagna, and about ¾ hr. farther, at Al Ponte, he joins the two Rtes. above described. The Swiss Federal Map does not indicate this pass, nor the faintly-marked track leading to it from Heiligenkreuz.

Route E.

VIESCH TO ISELLA, BY THE RITTER PASS.

12½ hrs.' walk, exclusive of halts.

The *Ritter Pass*, or *Passo di Boccareccio*, 8,858 ft. in height, is probably the most interesting route across the portion of the main chain described in this section. To reach Isella in one day from Viesch involves a laborious day's walk; but, in case of need, very fair quarters for the night may be had at the châlets of the Diveglia Alp on the S. side of the pass.

This pass is described by M. Desor, in his 'Excursions et Séjours dans les Alpes,' and is briefly noticed by Mr. Jacomb in the 4th number of the 'Alpine Journal,' but it seems to have

been very rarely visited by strangers. The rockwork on either side of the pass is somewhat difficult, and the assistance of an experienced guide is indispensable.

As mentioned in Rte. C, the two main branches of the Binnenthal unite a short way below the village of Binn. The way to the Ritter Pass lies through the *Lang Thal*, which at its lower end descends due N. to the junction. The path ascends along the rt. bank amidst blocks fallen from the mountain above. The hamlet of *Heiligenkreuz*, also called Langthal (4,938′), is reached in ¾ hr. from the fork of the valley, or nearly 3½ hrs. from Viesch. There is here a chapel which at certain times attracts pilgrims; at other seasons there is nothing to be had to eat here, or lower down in the valley, save black bread and milk. Travellers should attend to the commissariat before leaving Viesch.

At Heiligenkreuz the Lang Thal is divided into three minor branches meeting exactly at the same point. That opening to SSW. is the *Kriegalp Thal*, mentioned in the last Rte. The W. branch of the valley is the *Jaffischthal*. A short way farther up the latter valley turns to SW., and mounts to a col on the S. side of the Tunnetschhorn. By this way a traveller may reach the Simplon road, descending along the torrent that is crossed by the bridge of Berisal. The middle branch of the valley, intermediate between those above named, is called *Mättithal*. This is again divided into two branches, of which one mounts SW. to the *Steinen Glacier* on the N. side of the Hüllehorn. On the SW. this glacier overlooks the Steinenthal, that descends close to Berisal. It is probable that a fine pass may be made this way from Heiligenkreuz to Brieg, care being taken to keep well to the rt. in descending from the glacier to the Steinenthal.

The l. branch of the Mättithal, in ascending the valley, is that by which the traveller approaches the Ritter Pass. In 1 hr. from Heiligenkreuz he will reach the châlets of Gimmen (6,851′), the highest in this branch of the valley, occupied but for a few weeks in the summer. The little plain forming the basin of the upland valley is enclosed by an amphitheatre of steep rocks, nowhere less than 2,000 ft. in height, with the Hüllehorn (about 10,000′) to the rt, and the Helsenhorn (10,443′) on the l. The ascent of the rocks leading to the pass between these summits is far from easy. It appears to be best effected on the E. side; but Mr. Jacomb's party, not aided by a local guide, consumed 4 hrs. in reaching the summit. He considers that of this time 1 hr. was lost in seeking the way, and owing to various accidents. On advancing a few steps from the summit of the pass the traveller finds himself at the verge of another amphitheatre, far grander in its proportions than that which he has just left behind him. On the opposite side of a circular basin, about 3 m. in diameter, the Monte Leone (11,696′) rises 6,000 ft. above its base, and is connected with the adjoining peak of the Hüllehorn by a range whose prominent summits are the *Bortelhorn* (10,482′), the Furggenbaumhorn, and the *Wasenhorn* (10,628′). On the SW. of the amphitheatre the mountains leave a comparatively narrow opening by which the Cherasca torrent, fed by the glaciers that descend between the above-named peaks, issues to join the Diveria in the Val Vedro The scene is one of unexpected grandeur. From the accounts of M. Desor and Mr. Jacomb it appears that the descent on the S. side of the pass was much facilitated by snow, which lies in couloirs and steep slopes near the summit through the greater part of the year. In the month of September the writer saw the pass completely bare of snow on this side, and at that time the descent would probably have been found difficult. If no such obstacle should intervene, 1½ hr. suffices to reach the extensive pastures of the *Diveglia Alp*, here called Divei, about 5,600 ft. above the sea. This is the general

name for the basin at the head of *Val Cherasca*, also called Val di Nembro; but each of several groups of châlets has a separate local name. At those of Cornu, Mr. Jacomb found better quarters than usual in such places. The alp is abandoned on the 8th or 9th September, and after that date the traveller cannot count on finding shelter here. Fully 9 hrs., exclusive of halts, should be allowed for the walk from Viesch to the Diveglia Alp, and 3½ hrs. more are required to reach Isella. The scenery is throughout so beautiful that, even with the help of a local guide, it is unadvisable to pass through it after dark. A well-traced path follows the rt. bank of the Cherasca, and before long begins to descend steeply, till in 1 hr. the traveller reaches the Alp of Nembro, where a torrent descends from the S. to join the Cherasca. The shortest way in distance to Isella is by a path that mounts along the torrent to the châlets of Valle, and crossing the ridge between the Cherasca and the Val Vedro, descends into the latter valley close to Isella; but few travellers will feel disposed to undertake another steep ascent after the previous long walk, and most will prefer the far easier and very beautiful way by the valley. The traveller must avoid a tempting bridge, and keep all the way to the rt. bank of the Cherasca. For a short distance the paths leading from one châlet to another may confuse him, but he will soon find a tolerably well-traced path that at first lies very near to the bank of the torrent. As he advances, he will keep nearly at a level while the stream works its way down, so that after an hr.'s walk he finds himself at a considerable height above the bottom of the valley, enjoying beautiful views, and following an easy and well-made path. As he draws near the lower end of the valley, where numerous groups of houses appear on either bank, he will do well to take a boy to show the shortest way to *Trasquera*, a village standing fully 1,500 ft. above the junction of the Cherasca with the Diveria, enjoying a beautiful view of the Val Vedro. He must not attempt to descend the precipitous face of the mountain below the village. The true way lies for some distance about due W., and then descends by a rough and steep path, which may be easily missed without local guidance. This will lead him down to the high road within a few yards of the comfortable Hôtel de la Poste at *Isella*.

At Trasquera lives a chamois-hunter named Franz, who is the best guide for the passes at the head of the Val Cherasca. These are more fully noticed in § 21, Rte. B.

Route F.

ISELLA TO PREMIA, BY THE VAL CHERASCA.

The shortest way from Isella to the Val Antigorio is to descend by the Simplon road to the bridge of Crevola, and then, turning sharply to N., to ascend by the carriage-road to Premia. The mountaineer not pressed for time has a choice of several very interesting but rarely-used mountain paths, all passing through very fine scenery, which connect the Val Cherasca with the valley of the Devera.

1. *By Ghebbo and Ciamporino.* This course was taken by Mr. A. Milman, who has communicated the following brief notes to the Editor: 'Take a path that leads up the mountain and through the woods immediately behind the Hotel at Isella to the village of Trasquera; then over and round the shoulder of the hill above that village, descending and crossing the Cherasca to a hamlet called *Ghebbo*,—put in Leuthold's map on the wrong side of the stream. Follow the path up the valley beyond Ghebbo till you come to a ruined chapel and cross, where the path bifurcates. Take the rt. hand path which mounts N. to the pastures of Ciamporino, and then turns E. to cross

a col connecting those châlets with the head of the *Val Bondoler*. You descend into the valley of the Devera, which falls into Val Antigorio, just below Premia. In this route the path is rather difficult to find, but the scenery is very lovely ; first, the woods behind Isella, looking down upon the Simplon route and Val Vedro ; then in ascending the Alps beyond Ghebbo, and from the col, whence there is a fine view back to the Monte Leone and other high mountains over the Simplon. Nothing can be more rich and beautiful than the valley by which you descend into the Val Antigorio. From Isella to Premia, time 11 hrs.'

Mr. Milman has not given particulars as to the course taken by him in descending from the head of the Val Bondoler to the Devera. To judge from the Piedmontese Government Map, as well as that of General Dufour, there is no well-traced path, and it would be prudent to take a guide from the châlets of Bondoler to show the way.

The above-mentioned pass, connecting the châlets of Ciamporino with those of Bondoler, lies between the Pizzo di Ciamporino on the W., and *Monte Cistella* to the E. The latter is a very bold range with two summits, of which the higher or W. peak (9,439′) appears to be very difficult of access. Franz of Trasquera, mentioned in the last Rte., will guide a stranger to the summit. The position is very favourable for a view of this part of the alpine chain.

2. *By the Col di Valtendra* —The traveller who follows the course indicated by Mr. Milman will miss seeing the *cirque*, or amphitheatre, at the head of the Cherasca valley, described in Rte. D, as well as the striking scenery at the head of the valley of the Devera. To include both of these in a single day's walk from Isella would be a laborious undertaking, fit only for well-trained mountaineers in the height of the summer. By sleeping at the châlets of the Diveglia Alp, or at those of Ponte, the route here pointed out may be followed by moderate walkers, and the way from Diveglia to Premia may be combined with the passage of the Kaltwasser Joch, between the Simplon Hospice and Diveglia (§ 21, Rte. B).

The beautiful walk from Isella to Diveglia is noticed in the last Rte. The distance is reckoned 4½ hrs. from Isella, but an active walker will accomplish it in 4 hrs. ascending, or 3½ hrs. descending, the valley.

The course here described from Diveglia to Al Ponte was taken, many years ago, by MM. Desor, Escher, and Studer, and is described by the first-named gentleman. Near the foot of the long ascent to the *Passo di Boccareccio* (Rte. E), a stream descends from the E. into the *cirque* of Diveglia, through a stony glen that leads up to the *Col di Valtendra*, a wild rocky plateau, which, on the E. side, slopes towards the head of the Val Bondoler. The direct way to Premia descends first to the châlets of Bondoler (1 hr.), then, at first steeply, afterwards more gently, and at last steeply by the rt. bank of the torrent, till it enters Val Devera 2 hrs. from Bondoler. 2 hrs. more suffices to reach Premia. The above-named Swiss geologists turned to the l. or about due N., at the châlets of Bondoler, and ascended through a steep gully in the face of the dolomite rocks. From the summit a faintly-marked track leads across a second col, still more barren and dreary than that of Valtendra, to the châlets of Buscagna. Here the way from the Kriegalp Pass (Rte. D) joins the present Rte. The Buscagna Alp lies near the head of one of the branches of the Devera that meet at Al Ponte. Huge blocks of serpentine, fallen from the mountains on the N. side of the valley, are mingled with the châlets scattered over the pastures. In less than ½ hr. the traveller may reach Al Ponte by a path along the l. bank of the stream. The way to Premia is described in Rte. D.

SECTION 30.

ST. GOTHARD DISTRICT.

In the preceding portions of this work frequent reference has been made to the principal chain of the Swiss Alps extending from the E. end of the Lake of Geneva to the neighbourhood of Coire, and to the line of valley lying between that chain and the so-called main chain, forming the N. limit of the basin of the Po. As a general rule, the traveller who would reach Italy from the N. of Switzerland by a direct course must traverse both of those great alpine ranges. At a single point, however, the Swiss chain is completely cut through by a deep cleft which presents the means for entering Italy from the N. by traversing one instead of two alpine passes. It so happens that this pass, lying in the same line as the cleft of the Reuss valley, is one of the lowest in the main chain—6,936 ft. above the sea.

It is a noticeable fact that a little to the E. and W. of the great cleft through the chain of the Swiss Alps the main valley is barred by ridges parallel to that cleft, having the effect of separating from each other the head waters of the Rhone and the Rhine, which would otherwise have parted in the centre in the same manner as we see, in the E. Alps, one branch of the Adige flowing from the same plateau that sends down a feeder to the Inn, and the other branch of the same stream divided by no apparent barrier from the head waters of the Drave.

It is no less worthy of remark that besides the Vorder Rhein and the Rhone, which but for the above-mentioned barrier would meet somewhere near Andermatt, and the Reuss, which flows from thence to the N., the head valley of the Aar lies close to the ridge dividing the Rhone from the Reuss, while the three principal valleys on the S. side of the Lepontine Alps —those of the Ticino, the Maggia, and the Tosa—converge towards the same centre. The ridges of the Oberalp and Furca Passes are not more than 13 m. apart, and a circle with a diameter but little greater will include some portion of the basin drained by each of the seven most copious streams of the central Alps. It is a further peculiarity that in most cases the passes connecting the heads of these valleys with each other are amongst the lowest and most easily traversed in this part of the Alps. Several of these have been already described—the Grimsel Pass, between the sources of the Aar and those of the Rhone, in § 24 ; the Oberalp Pass, between the Vorder Rhein and the Reuss, in § 27 ; the Gries Pass, connecting the upper valley of the Tosa with the Rhone, and the San Giacomo Pass between the same valley and the Ticino, in § 29. In the present section it will be convenient to include the road of the St. Gothard from Altdorf to Bellinzona, the pass of the Furka between the Rhone and the Reuss, and that of the Nufenen between the former and the Ticino. These passes with the Oberalp Pass limit on three sides the portion of the main chain that seems to have been the seat of those operations whence the peculiar conditions above noted have arisen. On the E. side it is not so easy to determine the natural limit between this group and that of the Adula, described in the next §. On the whole it seems to be best defined by the line of the Lukmanier Pass, extending from Dissentis to the head of the Medelser Thal, thence to Olivone, and through the Val Blegno to Biasca.

Though cut through by one of the greatest of alpine highways, and limited by passes much frequented by strangers, this small district includes some of the least known valleys of the Alps. Of these the Gerenthal, enclosed by a range of snowy peaks, the highest in this part of the chain, such as the Pizzo Rotondo (10,489′), Pizzo Pesciora

(10,246′), Kuhbodenhorn (10,082′), and Galmihörner (10,063′), deserves the especial notice of travellers.

That valley may be visited from Oberwald in the Valais, and the Muttenthal is equally accessible from Realp. The natural head-quarters for a mountaineer would be at the Hospice of the St. Gothard; but that place does not offer him tempting accommodation, and it is doubtful whether lodging would be given for more than one night. The Val Canaria may form the object of an excursion from Airolo.

Route A.

FLUELEN TO BELLINZONA, BY THE ST. GOTHARD PASS.

	Swiss leagues	Eng. miles
Amsteg	3⅓	10½
Wasen	2½	7½
Andermatt	2¼	6¾
Hospenthal	½	1½
St. Gothard Hospice	2⅓	7½
Airolo	2⅓	7½
Faido	3¼	9¾
Giornico	2½	7½
Bodio	¾	2¼
Biasca	1¼	3¾
Bellinzona	4½	13½
	26⅓	78

Diligence twice daily each way in 14½ to 15½ hrs. The same carriages go on to the rly. station at Camerlata near Como, and passengers reach Milan in 24 to 26 hrs. Fares to Bellinzona: *coupé*, 27 fr. 20 c.; interior, 23 fr. 20 c.; —to Milan: *coupé*, 44 fr. 5 c.; interior, 36 fr. 45 c. *Coupé* secured in Lucerne. In summer a diligence runs by day between Fluelen and Airolo, performing the journey in about 9 hrs.

Voituriers (see Introduction, Art. IV.) abound on this line of road. The usual charges for a pair of horses with a tolerably good carriage are: Fluelen to Andermatt, 24 to 30 fr.—Andermatt to Airolo, 24 to 30 fr.—Airolo to Bellinzona, 40 fr.—Bellinzona to Como *viâ* Lugano, 40 to 50 fr.

The landlords of the chief hotels on the road have combined to supply carriages and horses, at the higher rates above mentioned, changing horses at the chief places on the way. Fluelen to Bellinzona, 100 fr.—to Como, 150 fr.—paid at the end of the journey. Carriages may be ordered from Lucerne or Como. The above charges do not include *trinkgeld* or *buonamano* to the driver: he expects from 2 to 3 fr. for each stage. There have been many complaints of the voituriers on this line. There is an understanding between them and many of the innkeepers, who agree to pay a gratuity according to the number of the travellers, and of course add the amount to the bill. In making an agreement the traveller should take care to specify that the same carriage is to be taken throughout the journey. It should be stipulated that the price includes all charges for tolls, and if extra cattle be required in the ascent, owing to the weight of the luggage or the number of the party, the charge should be included in the price agreed upon. It should be distinctly stated that the driver is to go to whatever inns the traveller may select; and it is better not to announce beforehand the inns that may be chosen, but to give orders to the driver when approaching the place at which he is to stop. When the agreement is not made with a man recommended by a respectable innkeeper, and in his presence, it is well to have it reduced to writing and signed by the person letting the carriage.

Persons travelling with their own carriages may engage voiturier horses, for which they pay the same price as if they also engaged the carriage; or else may post, changing horses at Intschi, Andermatt, the Hospice, Airolo, Faido, and Bodio. The Swiss post should contain three leagues, but on this road the tariff distances exceed the true measurement given above, the distance to Bellinzona being reckoned 9¾ posts or 29¼ *stunden*.

The *coupé* in a Swiss diligence is comfortable, the country is better seen than from an ordinary calèche when covered, so that persons travelling in

haste may well avail themselves of that conveyance ; but a part of the journey is made by night. Those who wish fully to enjoy the scenery will take a vehicle from Fluelen to Amsteg, walk thence to Faido or Giornico, and then hire a carriage to Bellinzona.

Those who make an excursion from the Lake of Lucerne to see the gorge of Schöllinen and the Devil's Bridge may hire a char to take them to Andermatt and return to Fluelen for 24 fr., or a carriage and pair of horses for 40 fr.

The Pass of the St. Gothard does not seem to have been known to the Romans. The steepness of the shores of the Lake of Lucerne has even to the present time prevented the construction of a road between Fluelen and Lucerne. In the middle ages, when boat communication on the lake became frequent, the pass was adopted as a common route from Lombardy to the middle and north of Europe. Before the end of the thirteenth century a house of refuge, or hospice, was established at the place which still keeps the name Hospenthal. During the next century a hospice was erected at the summit, with a chapel dedicated to St. Gothard, which has given to the pass its present name. Up to the year 1820 the road was a broad track paved with slabs of granite, suitable for beasts of burden, but seemingly impassable for wheeled vehicles. To the great surprise of the inhabitants, an English traveller crossed it in his carriage in 1775, and another of the same nation repeated the exploit in 1793.

The opening of the new carriage-roads over the Simplon and the Mont Cenis in the early part of this century, followed by the construction of those over the Splügen and Bernardino, made it necessary for the population on either side of the St. Gothard to follow the example, if they would not lose the advantages of the traffic. The present road was completed after some considerable delay between the years 1820 and 1830. It is easy and safe, except in spring, when the avalanches are frequent in the gorge of Schöllinen, and on the S. side of the pass. In winter passengers are taken in carriages laid upon sledges as far as Hospenthal, and from thence to Airolo in little open sledges about 2 ft. wide, each drawn by a single horse. In that season the passage is sometimes interrupted for several days by snow-storms.

At the close of the last century the road of the St. Gothard was the chief seat of some of the most remarkable military events recorded in history. They are so intimately connected with the scenes through which the traveller passes, that it seems impossible not to give in this place a brief sketch of the campaign. At the close of 1798 the French troops had crushed the desperate resistance of the population of the Forest Cantons, and had established themselves on the shores of the Lake of Lucerne. In the spring of the following year they advanced through the Canton Uri against an Austrian corps that occupied the valley of the Reuss and the St. Gothard Pass, drove their opponents down the Val Leventina, and detached a corps across the Oberalp Pass into the valley of the Vorder Rhine, where they sacked and burned the Abbey of Dissentis with the treasures of its famous library. A few days later the Austrians assumed the offensive, aided by the Swiss peasantry driven to desperation by hatred of the invader. Suchet was driven back across the Oberalp, and the main body under Lecourbe had to recross the St. Gothard. The defile of the Reuss was the scene of desperate fighting; the French had to yield, and by the 6th June the last man had embarked at Fluelen, and the valley was clear of the enemy. Satisfied with this success, the Austrians remained for two months inactive. Their enterprising opponents made use of the interval to prepare a combined attack. Early in August two separate French corps advanced by

the Surenen and Susten Passes, while the main body under Masséna reached the lower end of the valley of the Reuss in a flotilla of boats. Once more the tide of war surged up the valley, as the Austrians, attacked on all sides, retired to the Devil's Bridge, where, in the midst of a desperate encounter, the blowing up of an arch leading to the bridge sent the soldiers of both nations to find a common fate in the torrent below. The news of the approach of another body of French troops under Gudin, who had forced the passes of the Grimsel and the Furka, decided the Austrian retreat. They crossed the Oberalp, and left the French masters of Uri.

Before a month was out new actors appeared on the scene. An army of uncouth aspect, speaking a language unknown to the previous combatants, advanced through the Val Leventina. This consisted of 18,000 Russian infantry with 5,000 Cossack cavalry, advancing under the old Suwarof to effect a junction with the larger Russian force then operating in the North of Switzerland under Korsakof. Despite the skill and valour of the French resistance, the dogged courage and sheer weight of the Russians prevailed. Having twice advanced as victors, the French retired a second time across the St. Gothard, and after another deadly conflict yielded the defile of the Devil's Bridge, which surely in that year deserved its name. In his retreat, Lecourbe, the French general, carried off or burned every boat upon the lake, and left the Russian general without apparent means for exit from a valley completely exhausted of food and necessaries. Suwarof lost no time. Knowing the impossibility of leading an army along the precipitous shores of the Bay of Uri, he entered the Schächenthal, E. of Altdorf, crossed the Kinzig Kulm (§ 26, Rte. L), and descended upon Muotta, whence he expected to force his way to Schwyz, and so reach the L. of Zurich, there to join the Russian forces. After some days' sanguinary skirmishing in the valley below Muotta, he learned the defeat of Korsakof, and saw clearly that he was no longer fighting for victory, but to save his army from destruction or captivity. Pursued by the French under Masséna, he led his weary and half-starved troops over the Pragel Pass (§ 26, Rte. K) to Glarus, but there found that the outlet of the valley of the Linth towards Wesen was barred by a strong French force commanded by Molitor. The only hope of escape from the toils of his pursuers was to find a passage for his men across some part of the chain dividing the Canton Glarus from the Grisons. The season was far advanced, and snow had already fallen on the mountains; but there was no hope of safety elsewhere, and accordingly the Russians left Glarus on the 5th of October, marched up the Sernfthal, and finally reached the Valley of the Rhine by the Panixer Pass, after a series of movements such as probably never before were accomplished by a regular army.

Fluelen and Altdorf have been described in § 26. Rte. A. The valley of the Reuss opens due S. from Altdorf as far as the foot of the Bristenstock, where it bears somewhat to W. That fine peak is often in view from the high road, which is carried along the base of the mountains on the E. side of the valley. Near *Schaddorf* is held annually in May, with many curious antique usages, the general assembly (Landesgemeinde) of the Canton Uri. Every male citizen above 20 years of age, not being a priest, has a vote. In these assemblies questions of public importance are decided, and the officers of government elected for the ensuing year. About 1½ hr. from Altdorf is the opening of the *Erstfelderthal*, a glen running deeply into the snowy range W. of the Titlis. Its head is closed by a glacier that descends between the *Schlossberg* (10,263′) and the *Spanörter* (10,492′); by it Mr. Sowerby, one of the chief explorers of

this district, made a pass to Engelberg.

Above the juncture of that glen the valley of the Reuss is contracted between the base of the Kleine Windgelle to the E. and a ridge diverging from the Spanörter to the W. Near *Silenen* are the remains of several ruined castles that once guarded the passage, and a chapel dedicated to the 'Fourteen Helpers in Need,' said to date from 1081. At the neighbouring hamlet of Evibach is the house of Joseph Maria Trösch, formerly the best guide for the Maderanerthal. He is no longer able to undertake difficult expeditions. Another good guide, named Ambrose Zgraggen, of Silenen, is mentioned in Rte. B. To the l. in approaching Amsteg is seen a green hillock with some remains of a ruined castle, believed to be that of *Zwing Uri*, built by Gessler, and destroyed in 1308 after the expulsion of the Austrian bailiffs.

Amsteg (Inns: Weisses Kreuz, very good and reasonable country inn, but not in favour with the voituriers: Hôtel des Alpes, new, well spoken of; Hirsch, also good; Ochs; Stern; Löwe) lies at the junction of the Maderanerthal with the main valley of the Reuss. Though inconveniently low—1,713 ft. above the sea—it is well situated for several interesting excursions, most of which are described in the next Rte. In the angle between the Reuss and the Kärstelenbach, issuing from the Maderanerthal, rises the Bristenstock, which is the most remarkable object in this part of the valley. Here the road crosses the Reuss and begins to ascend. An active walker may reach Andermatt as soon as a carriage. After gaining a fine view of the Great and Little Windgelle and the Scheerhorn, the traveller in ½ hr. reaches the post station at *Intschi* (2,190′), and a little farther passes a fall of the Intschibach, issuing from a wild ravine on the rt. called *Zgraggenthal*. At a second bridge 1 m. above Intschi the road returns to the rt. bank. The precipices of the Bristenstock, rising tier over tier to a height of nearly 8,000 ft. above the valley, are here very grand. On the opposite side the mountain is less steep, and the village of Gurtnellen is seen. The main valley ascends to the SSW., and due S. opens the *Fellithal*, famous for rare minerals. Dissentis may be reached that way by a pass (*Felligrat?*) leading direct to the Oberalp See.

Here the road enters among the crystalline rocks, wherein gneiss and mica slate predominate, and it becomes clear to the eye of the geologist that the valley of the Reuss is a mere cleft, cut through the crystalline axis which extends continuously from the chain of the Bernese Alps to that of the Tödi. (See Introduction, art. Geology.) *Saxifraga cotyledon* is here not uncommon. The road lies for some miles through the Wasener Wald, formed of old weather-beaten pines rooted amid huge blocks fallen from the adjoining heights. The forest comes to an end at Wyler, and the road crosses a third bridge at the Pfaffensprung, a spot where the rocks are separated merely by a deep and narrow chasm cut by the Reuss. The name is derived from a popular tale of a monk with a girl in his arms who cleared the abyss by a bold leap to save himself from his pursuers. The road traverses the Maienbach, issuing from the wild valley that leads to the Susten Pass (§ 25, Rte. E), and in 2 hrs. from Intschi reaches

Wasen (Inns: H. des Alpes, new, well spoken of; Ochs, rustic, not bad), a large village 3,068 ft. above the sea, much exposed to avalanches. On leaving the village, a waterfall of the Rohrbach is left on the rt. This torrent descends from the *Voralpstock* (10,578′), the SE. outlyer of the Spitzliberg, while on the opposite side of the valley rises the bolder peak of the *Rienzerstock* (9,777′), the western summit of the Crispalt range. The Reuss is traversed by a fourth bridge, and a mile farther the road returns to the l. bank at the Schöne Brücke. Here are seen the last patches of rye. A huge block of gneiss lying

by the roadside is called Teufelstein, having been dropped there by the devil when, on an errand of mischief, he happened to meet an old woman who greeted him with 'God save you!'

Little more than 2 m. above Wasen is *Geschenen* (Inn: Rössli, clean and reasonable; Hôtel des Alpes. This little village, 3,619 ft. above the sea, stands at the opening of the *Geschenenthal*, one of the neglected valleys of the high Alps that has only lately begun to attract the attention and activity of mountaineers. [The main branch of the stream, called Geschenen Reuss, is fed by the Glaciers of the range extending from the Winterberg to the Sustenhorn. The passes leading to it are briefly noticed in § 25. Rte. H; but even those who do not undertake difficult excursions will be well rewarded by following the track up the valley to the foot of the Kehle Glacier. The chief hamlet of the valley, a group of 20 or 30 houses, is reached in 3 hrs. from Geschenen; a pass leads thence to Realp. Another branch of the same torrent leads to the ridge connecting the Sustenhorn with the Spitzliberg, and by it the traveller may reach the head of the Maienthal, on the E. side of the Susten Pass. A cave called Sandbalm at the upper end of the valley has been very productive of fine quartz crystals.]

On leaving Geschenen the high road crosses the Reuss by the Häderli Brücke, and enters the famous gorge of *Schöllinen*, whose savage grandeur can scarcely be fully appreciated except by those who traverse it on foot. Between rugged walls of rock, almost completely bare of verdure, the Reuss rages in an almost uninterrupted cataract, while the road, sometimes creeping along the face of the precipice, sometimes mounting by zigzags, once and again spanning the breadth of the valley by a single arch, triumphs over the obstacles that nature has set to man's progress. For the seventh time since Amstäg the Reuss is crossed by the Sprengi Brücke, at a point where it makes a fine cascade. This part of the route is dangerous in spring, owing to the frequent avalanches. Recesses are cut into the rock at some points to give shelter to foot-passengers, and in one place the road is completely covered with a massive stone gallery, 80 yards long. Wooden crosses by the wayside commemorate fatal accidents. At length, on turning the corner of a rock, the traveller reaches the point where the stern sublimity of the scene attains its climax, and the stream is crossed for the last time at the *Devil's Bridge* (Germ. Teufelsbrücke). Issuing from a gorge enclosed between vertical walls of gneiss, the Reuss is hurried onward from cataract to cataract till it is reduced to a roaring mass of foam. Here the ancient road, partly hollowed out of the rock, partly supported by solid masonry or upon arches, was carried across the chasm, barely out of reach of the spray, by a slight-looking circular arch without parapets, and but 5 or 6 ft. wide. Unduly ascribed to that great popular architect, the devil, the old bridge appears to have been built in 1118 'by Abbot Gerald of Einsiedlen.' —[M.] Amidst the conflict of the elements, and the no less furious strife of hostile armies, the ancient, seemingly fragile structure has survived, offering a striking contrast to the new massive bridge over which the present road is carried. However prepared the traveller may be by the many attempts of writers and artists to depict the scene, it is one of those that can scarcely disappoint expectation. As he stands on the modern bridge, he can scarcely avoid recalling the desperate encounters between the troops of three nations that connect the name of this spot with the campaign of 1799; and he will soon persuade himself that even in regard to such recent events, popular history is largely compounded of the mythical element. The time-worn aspect of the old bridge shows that it was not then blown up, as is commonly asserted, but only an arch leading to it—the reason being clearly

that neither general would lose the necessary means for advancing or retreating through the valley. Neither is it true that the passage was forced, either by the French against the Austrians, or by the Russians against the French. On each occasion the retreat of the retiring army was decided by the appearance of hostile troops on flank or rear.

There is a scene, sometimes witnessed by travellers who pass this way in winter, that exceeds all that the imagination can picture to itself of the fury of human warfare. A winter storm in the gorge of Schöllinen is an event never to be forgotten by one who has beheld it. The howling and shrieking of the blast only at intervals allow the hoarser roar of the torrent to reach the ear, and the surrounding crags are but dimly seen amid the drifting snow that is swept along through the cleft of the valley. At such times the country people who have need to ascend or descend through the valley take refuge in the galleries above and below the Devil's Bridge, and when it becomes necessary to risk the passage, creep over on hands and knees in order to avoid as far as may be the incredible fury of the wind at that point.

Above the Devil's Bridge the Reuss is enclosed between precipices so steep that there is no room for a goat to pass. Up to the beginning of the 18th century the only mode of access to the upper valley was by a wooden platform, partly supported on props, partly hung by iron chains rivetted to the rocks above. In 1707 a tunnel or gallery, 210 ft. long, called *Urner Loch*, was pierced through the rocks on the rt. bank. This was afterwards enlarged to allow the passage of carriages. There are few more extraordinary contrasts than that which awaits the traveller as he issues from the S. end of the Urner Loch. He has left behind him a scene unsurpassed for stern ruggedness; he emerges upon a peaceful upland basin, where green level meadows stretch for 3 or 4 m. amidst mountains of comparatively moderate height and gentle slope. The first impression of the upper valley of the Reuss, or *Urserenthal*, is pleasing, but the absence of bold features in the scene, and the scarcity of timber, make it somewhat monotonous. Cut off by an impassable defile from the lower part of the Canton Uri, it was originally peopled from the valley of the Vorder Rhein, and was long a dependency of the abbots of Dissentis. The construction of the Devil's Bridge, and of a practicable path, brought the inhabitants into connexion with their neighbours of Uri, and they joined that canton in the 14th century. Scarcely 1 m. beyond the Urner Loch is

Andermatt (Inns: H. Helvetia, new, handsome house; Hôtel Gotthard, good and reasonable, *pension* 7 fr. a day; H. Oberalp, new and good; Bellevue; Drei Könige). This little village (Ital Orsera) stands 4,730 ft. above the sea, near the site of a former village destroyed by avalanches. This is threatened with the same fate. In 1799 it was pillaged by the French; gutted by the famishing Russians, who devoured everything, even to candles, soap, and skins; but, worse than all, both armies felled a great part of the forest on the slope of the Gürschenstock, S. of the village, which is its only protection against the spring avalanches. In that horrible year three-fourths of the inhabitants were slaughtered, and the remainder reduced to beggary. This has long been a halting-place for travellers passing the St. Gothard, but of late years it has, as well as Hospenthal, become frequented by persons who find here mountain air, good accommodation, and some interesting mountain excursions. There is a good collection of alpine birds made by M. Nager. Fine minerals are kept for sale by two or three persons in the village. Of mountain excursions the most frequently made are those to the Oberalp Pass and Oberalp See, and

that to the summit of the Badus, both described in § 27, Rte. C. A guide is necessary for the latter expedition. The Fibbia and the Lucendro lake, near the summit of the St. Gothard Pass, may be visited from hence, but better still, from Hospenthal. The Bannwald, or protected forest, where it is forbidden under heavy penalties to cut or injure the trees, is now much reduced in dimensions. The botanist will find there *Mulgedium alpinum*, *Hieracium picroides*, and some other interesting plants. Mountaineers intent on alpine expeditions may here engage as porter a man named Russi, no longer young, but still strong, active, and cheerful.

Rather more than 1½ m. of level road leads the traveller from Andermatt to *Hospenthal* (Inns: Meyerhof, a large handsome house, first-class accommodation and prices; Goldener Löwe, or Lion d'Or, good, kept by the same proprietor, who has a large stock of horses and carriages to let). Minerals, for which the neighbourhood is famous, may be bought here. There are no remains of the ancient hospice that gave its name to the village, but a remarkable tower that overlooks the place is of the Lombard period. This is the point where the track from the Furka Pass (Rte. C) meets the high road, just at the commencement of the ascent to the St. Gothard Pass.

The traveller, whose expectations are heightened by the grand scenery that he has traversed in approaching from either side the ridge forming the actual Pass of St. Gothard, is apt to feel some disappointment as he reaches the part of the road where he naturally hopes to find scenes of the most striking character. It must be owned that as compared with most other passes over the main chain this is deficient in objects of interest. The neighbouring peaks are of very moderate height, and those seen from the road scarcely rise more than 2,000 ft. above the summit level. The road mounts by zigzags from Hospenthal on the l. bank of the branch of the Reuss that descends from the Lucendro lake near the pass. The other branch flows past Hospenthal from Realp (Rte. C). Passengers taking the short cuts may not only make the ascent, but reach Airolo on the other side some time before the diligence. This can be recommended only to active walkers used to the mountains. A mistake in the way might lead a stranger into difficulties, and expose him to the inconvenience of losing his place. In 1 hr. from Hospenthal the road passes by a house of refuge, where refreshments are said to be sold at exorbitant rates. The boundary of the Canton Tessin is passed at some distance below the Roduntbrücke, which is 2 hrs. above Hospenthal. Here the Reuss is crossed for the last time about 1 m. from the little *Lago di Lucendro* (6,834′). A mountaineer would probably find no difficulty in attaining from thence the summit of the *Pizzo di Vinei* (or Lucendro), 9,708 ft. in height, lying SSW. of the lake, but not seen from the road.

At the Roduntbrücke commences the nearly level, dreary plateau that forms the summit of the pass. It is feared in winter, on account of the *tourmente* that surprises travellers, and not seldom bewilders and overpowers them before they are able to attain a place of refuge. About 1 m. beyond the bridge is the summit, 6,936 ft. above the sea. Many pools lie in the depressions of the granite on either side of the top. Nearly ½ m. farther, and but 69 ft. lower, is the

Hospice, or refuge for poor travellers, maintained by voluntary contributions, aided by a small grant from the Canton Tessin. This is said to be well conducted, under two lay managers, besides a chaplain, who keeps a meteorological register. As many as 20,000 rations of bread, soup, and coffee are given here gratuitously every year. A small contribution from the passing traveller will not be misplaced. Close at hand is the post station, and in the same building an Inn of uninviting appearance. Opposite to this is a small new Inn, well spoken of. The buildings here are on the most massive scale, intended

to resist the furious storms that not rarely assail them, and to keep out the severity of the winter cold. The Hospice lies midway between two summits of about equal height — the *Sasso di San Gottardo* (8,983′), and *La Fibbia* (8,996′). The latter is now often ascended, even by ladies, and is said to command a fine alpine panorama. The ascent and return to the Hospice are made in 4 hrs., exclusive of halts, and may be easily taken in a day's walk from Andermatt or Hospenthal to Airolo. A longer excursion is the ascent of the Tritthorn (about 10,000′), NE. of the Sasso di San Gottardo; about 4 hrs. from the Hospice to the summit, which commands a very extensive panorama. The view has been published, and will be found, along with photographs of the neighbourhood, at the new Inn. Within ½ m. from the Hospice the road reaches the S. verge of the plateau, and at once commences to descend by numerous zigzags into a ravine called Val Tremola, ill famed for the many fatal accidents that have happened there from spring avalanches. Large numbers of men and horses have ere now been swept away at once by a single avalanche. This locality has given its name to a mineral — called Tremolite — which is here abundant. The present road appears to follow a much safer course than the ancient track. Foot-passengers follow a very steep course by which they may descend to Airolo in little more than 1 hr. from the Hospice. The dangerous part of the Val Tremola is passed when the road, ceasing to zigzag, reaches a sort of shelf in the slope of the mountain, and passes a new Refuge (5,584′), built by the Cantonal authorities. Here the old track crosses the torrent, leading by a shorter way to Airolo, while the high road continues for some way along the rt. bank of the stream, and after passing it lower down, finally reaches the level of the valley, ½ m. from

Airolo — Germ. Eriels — (Inns: Posta; Tre Re; belonging to same proprietor, very fair accommodation). This is the chief place in the upper valley of the Ticino — called *Val Bedretto* — extending about 11 m. westward to the Nufenen Pass (Rte. D). Although there is a sensible change of climate as compared with valleys of equal elevation on the N. side of the main chain, this lies too high (Airolo being 3,868 ft. above the sea), and is too completely surrounded by mountains, to exhibit the characteristic vegetation of the Italian valleys. The language and appearance of the people, and the aspect of the buildings, tell of Italy; but there is not that abrupt transition from the north to the south that awaits the traveller who crosses the Cenis, the Simplon, or some other passes of the Alps. Close to Airolo is the opening of the Val Canaria, noticed in Rte. E.

Below Airolo the valley of the Ticino bears the name *Val Leventina*. The upper portion, as far as Giornico, abounds in beautiful scenery, and the gradual change in the vegetation is especially interesting to those who enter Italy for the first time. Few valleys abound more in waterfalls, of which but a few are here mentioned. The road keeps at first to the l. bank, and about 1 m. from Airolo traverses a tunnel close to the remains of a tower attributed to the Lombard king Desiderius. On high ground to the l. stands the village of Madrano, whence a path leads to the Medelserthal by the Uomo Pass (Rte. G). A little farther the road passes opposite to the waterfall of *Calcaccia*, on the S. side of the valley. Here the traveller enters the defile of *Stalvedro*, obstinately defended by the French, in 1799, against a greatly superior force of Russian troops. The road crosses to the rt. bank, traverses the hamlets of Piotta and Ambri, where the valley widens, and corn-fields give evidence of a milder climate. On the opposite bank is the large village of *Quinto*. At *Dazio Grande* (3,059′), where the road passes a toll-house and country Inn, it enters a second defile of grander proportions than the first — one of the most striking scenes in the entire route. The Tessin here forces its

way through a cleft in the Monte Piottino, or Platifer. This offers at once a likeness and a contrast to the gorge of Schöllinen by which the traveller approached the pass on the N. side. Less savage and awful, this is certainly not less beautiful. Instead of a few stunted and shattered pines, deciduous trees and shrubs here cling to the crevices of the rocks and crown the heights, softening the sternness of the scene. In the early summer the beautiful *Saxifraga cotyledon* decks the rocks. Until the carriage-road was carried through the defile, it was necessary to make a long ascent, and still longer descent, in order to reach Faido. The first course adopted for the road was close to the river, and partly sustained on arches along its bed; but this was carried away by the great storms of 1834 and 1839, and the present line is conducted at a considerable height above the stream. It traverses three short tunnels, and before issuing from the defile passes a pretty waterfall. The vine has made its appearance, and the chestnut has become the prevailing tree, before reaching

Faido—Germ. Pfaid—(Inns: Angelo, good; Prince of Wales, new), the chief place of the Middle Val Leventina, 2,366 ft. above the sea. In 1755 the people of Tessin, who had long been oppressed by their masters, the Cantons Uri, Schwyz, and Unterwalden, made an unsuccessful effort to throw off the yoke. The heads of their leaders were here taken off in the presence of the assembled people. Two waterfalls, of which the finest is that of Piumegna, may be visited by any one halting here. Below Faido the Val Leventina assumes a more completely Italian character than it had done above the defile of Dazio Grande. The course of the stream, which was a little S. of E. on leaving Airolo, bends first to SE., finally nearly due S., and the road with short exceptions keeps to the l. bank. The climate becomes warmer, and population more numerous, as the traveller descends the valley. At *Chiggiogna* is a very ancient church, and a tower of uncertain origin. Amidst beautiful scenery enriched by many new objects of interest, amongst which is the waterfall of Gribiasca, and traversing another defile, he reaches

Giornico—Germ. Irnis—(Inns: 'H. du Cerf, clean; Corona, dirty' [M. J.], one of the most interesting places on this route. The passing traveller should make a point of halting here. The position is extremely fine.

On the rt. bank opposite the village a bold mountain mass—Cima delle Pecore—rises abruptly to a great height, while the valley below is clothed with the rich foliage of the chestnut, and the fig-tree begins to make its appearance. There are here two ancient churches, very curious in their architecture and ornamentation. These are 'the *Ch. of Santa Maria di Castello*, whose substructure is said to exhibit traces of a fort, attributed to the Gauls (?); and the Ch. of *San Nicola da Mira*, regarded by the vulgar as originally a heathen temple. Both these churches are certainly examples of the earliest form of Christian buildings, and highly deserve the attention of the architect and antiquary. Service is not performed in San Nicola, though it is kept in repair. The architecture is of the rudest Romanesque style, and the E. end offers, perhaps, the most unaltered specimen of the choir raised upon substructions that can hardly be called a crypt, found in the ancient Lombard churches of Italy, distinguished by staircases, whereas it here subsists in its primitive form.'—[M.] Half-way between Giornico and Bodio are the Sassi Grossi, huge blocks of stone, that serve as monuments of an extraordinary victory gained in December, 1478, by a small force of Swiss over the army of the Duke of Milan.

Bodio (with two Inns) is the post station, ¾ hr. from Giornico, nearly opposite the opening of the Val d'Ambra, by which a path leads to the Val Verzasca (§ 32). Less than 4 m. farther is

Biasca (Inn: Unione, not good nor clean), a large village at the junction of

the Val Blegno (Rte. F) with the main valley. One of the snowy peaks of the Adula Alps is seen through the opening. Cretins abound here. For a notice of the bergfall of 1512, see Rte. F.

The lower part of the Val Leventina extending to the Lago Maggiore is called *Riviera*. Here the valley of the Ticino expands, the mountains leaving between their bases a broad level space, which is often defaced by the overflow of the river. Though the scenery is not uninteresting, it is apt to lose by comparison with the beauty of the upper valley from Airolo to this point.

The villages of *Osogna*, *Cresciano*, and *Claro* are passed in succession. Near the latter are some ruins of a castle, once held by the Dukes of Milan; and a short distance farther, fully 11 m. from Biasca, the road reaches the junction of the Val Misocco with the valley of the Tessin. The road of the Bernardino (§ 31, Rte. A) meets that of the St. Gothard at the N. side of a massive bridge over the Moësa, where this enters the main valley close to the battle-field of *Arbedo*. That village, lying to the l. of the road, has given its name to one of the few fights where, in the heroic age of their history, the valour of the Swiss failed to compensate inferiority of numbers. Used to encounter fearful odds, 3,000 Swiss here withstood, in 1422, a Milanese army of 24,000 men under Count Carmagnola, one of the first generals of the time. From early morning till nightfall the children of the Alps held firm, rooted to the ground, and dealing slaughter around on their assailants. Most of their leaders and more than half their force had fallen, when darkness enabled the survivors to retreat. The banner of Zug, carried safely out of the fearful fray, when man after man who held it had been struck to death, is still shown in the arsenal of the Canton.

More than 2 m. of hot and dusty road lead from the bridge over the Moësa to

Bellinzona (Inns: Angelo, best; Hôtel de la Ville, formerly Aquila d'Oro, many complaints of late), the chief town of the valley of the Ticino, dividing with Lugano and Locarno the rank of capital of the Canton Tessin. The aspect of the town from without is extremely picturesque. Its position near the junction of the valleys leading to the St. Gothard and the Bernardino Passes to the N., and the roads to the Lago Maggiore and Lake of Lugano to the S., makes it the key to this entrance into Italy. It appears to have been held as a fortified station by the Gauls and the Romans, as it undoubtedly has been since the 13th century, and is still maintained as a fortress by the Swiss Confederation. When the greater part of the present Canton Tessin was finally reduced to the condition of obedience to the three *Urkantone*, Schwyz, Uri, and Unterwalden, the latter ruled the land jointly by governors who inhabited the three castles that still overlook the town, and used as absolute a sway over the subject people as that of the Austrian bailiffs against whom they had themselves revolted two centuries before. The Castello Grande, once occupied by the Uri governor, is now an arsenal and cantonal prison. Admission is given to strangers (charge 1 fr.) who go to admire the fine view. The Castello di Mezzo, seat of the Unterwalden governor, and Castello Corbario belonging to Schwyz, now form part of the fortifications of the town. From many places in the neighbourhood, especially the church of Sta. Maria della Salute, the Castello Grande above mentioned, and the Augustinian monastery, there are fine views over the valley extending to the Lago Maggiore. A longer walk is that to the gorge of the *Sementina*, a picturesque ravine opening on the rt. from the road to Locarno, about 2 m. from the town.

The interior of the town has nothing that need detain a traveller coming from Italy, but one who is crossing the

Alps for the first time will be interested by the general aspect of the buildings and the people, by the principal church enriched with marbles and bas-reliefs, and by the very ancient church of San Biagio near the Lugano gate.

The roads to Locarno and Magadino are described in § 32, Rte. A, and that to Lugano in § 33, Rte. C.

The botanist arriving from the Alps will here find several southern species not often seen in Central Europe, such as *Anchusa angustifolia*, *Centaurea splendens*, *Andropogon Gryllus*, &c. To the naturalist, as well as the lover of scenery, Locarno is a far more tempting stopping-place.

Route B.

EXCURSIONS FROM AMSTEG — ASCENTS OF THE GREAT AND LITTLE WINDGELLE AND THE BRISTENSTOCK.

The *Maderanerthal*, which joins the valley of the Reuss at Amsteg on the road of the St. Gothard, is described in § 27, Rte. B, in connection with the passage of the Clariden Grat, separating it from the head of the valley of the Linth. It is the point whence the two fine peaks of the Windgelle, lying N. of that valley, and that of the Bristenstock on the opposite side, may best be ascended. It seems convenient to describe these, and a few other, excursions under a separate heading.

Referring to the description of the Maderanerthal for some remarks on the topography and nomenclature of the adjoining ranges, it will be seen that the Kleine Windgelle is the correct name for the westernmost peak of the Clariden Alps, but that the same peak is called Grosse Windgelle in the Maderanerthal, while the people of the same valley apply the name Kalkstock to the peak properly entitled to the name Grosse Windgelle. Ambrose Zgraggen and Franz Zurfluh are the best guides in the valley; Jos. Maria Trösch is out of health, but Melchior Tröseh, a younger man, is well spoken of. It must be remembered that Amsteg lies low—at 1,713 ft.—and that the ascent of any of the higher peaks from thence is long and fatiguing. It is therefore desirable either to start very early, some time before daylight, or else to sleep at some of the châlets on the way.

Ascent of the Kleine Windgelle (9,848′). An account of this expedition, made in 1844, was given by the late George Hoffmann, in the first seseries of *Berg- und Gletscher-Fahrten*. He was followed in 1862 by the Rev. John Sowerby.

Hoffmann ascended directly from Amsteg in 1½ hr. to the châlets of Waldiberg, then in 1 hr. more to those of Niederstäffeli, and in ¾ hr. more to those of Oberstäffeli, the highest on the SW. side of the mountain. A cattle-track leads thence in 1 hr. up a steep slope to the base of a belt of rock called Stuck Wand, that forms the upper limit of the alpine pastures. A stiff scramble follows, difficult enough to make progress rather slow. In approaching the highest peak Hoffmann found large blocks of green and red porphyry, but has given no particulars as to the relation between this rock and the limestone strata of which the mountain is mainly composed. On the last peak, and only 200 or 300 ft. below the top, an abundant spring of pure water bursts out from the rock, and disappears again immediately in some of the clefts. The last rocks appear quite inaccessible, but the summit is attained, without much further trouble, in 8 hrs., exclusive of halts, from Amsteg, by passing round to the E. side of the peak. In its main particulars the view is much the same though less extensive than that from the higher peaks next noticed; but the rocks of the Grosse Windgelle present a very grand appearance from this point, rising more than 600 ft. above the spectator. Mr. Sowerby, with A.

Zgraggen, took a longer but easier course. 'Following the path of the Maderanerthal for a short distance beyond Bristen, we took a path on the l. up to Golzern. Keeping above this, and rather to the rt., we gained the hollow between the Great and Little Windgelle, not far from the glacier called the Aelpli-Firn. We were now level with the shaly terrace which separates the upper and lower precipices of the mountain. This we followed, till we reached a gap in the fortress above us, through which we easily gained the summit in 6½ hrs. from Amsteg.'—[J.S.]

The hollow between the Great and Little Windgelle, which is easily reached in 4 hrs. from Amstäg, is composed of *Schrattenkalk* (see Introduction, art. Geology), which is here split up in a wonderful way. 'Some of the rents are several ft. in width, and 40 or 50 ft. deep.—[J.S.]

Ascent of the Grosse Windgelle (10,463′). The extreme steepness of this peak, and the fact that it is composed of limestone, always less safe than crystalline rocks, had procured for it a reputation for inaccessibility when George Hoffmann undertook the expedition in 1848. His two guides, J. M. and Melchior Trösch, being sent in advance to reconnoitre, reached the summit for the first time, and after some delays, owing to bad weather, they led that traveller to the top some 15 days later. The best starting-point is the Alp of Bernertsmatt, reached in 4½ hrs. from Amsteg. The peak is formed of limestone rock, bare alike of snow and of vegetation, presenting a nearly vertical face to the W., but less steep to the SW., where a small glacier, called Staffel Glacier, abuts against the base of the rocks. After encountering some difficulty in passing from the glacier to the rock, they found the greater part of the ascent (as often happens) much less difficult than it appears when seen from a distance. In one place it was necessary to pass along the top of a connecting wall of rock only about 1 ft. broad, with a precipice on either hand. Hoffmann remarks that the ascent cannot be undertaken when the rocks are wet after rain or fresh snow, as they then become dangerously slippery. In less than 5½ hrs. from the alp the summit was gained. A second and equally high point, less than 100 yards distant, is separated by a deep impassable chasm, and seems inaccessible. The second ascent in 1864, by MM. Raillard and Finiger, and the third, in 1866, by Mr. Sowerby, were accomplished in much less time.

Ascent of the Bristenstock (10,089′). This excursion has been rather frequently made of late years, and its popularity is doubtless owing in great measure to the account given by Mr. E. S. Kennedy in the first series of '*Peaks, Passes, and Glaciers*.' That interesting narrative went to show that even very experienced mountaineers may be involved in serious difficulties by inattention to the rules of their art. There is one way up from Amsteg, now well known to several of the guides at that place, by which the summit is reached without serious difficulty, but not without labour, as an ascent of more than 8,000 ft. is always a considerable day's work. Excluding halts, 7 hrs. should be allowed for the ascent, and from 4 to 5 hrs. for the descent. It is said that the easiest way to the top is from the side of the Fellithal. By sleeping at some of the châlets in that wild glen, a traveller, with a competent guide, may reach Amsteg over the top of the Bristenstock. It is better placed for a view than any of its neighbours, as its position commands a great part of the valley of the Reuss and the bay of Uri, in addition to an alpine panorama of great extent.

The *Gross Ruchi* (10,295′) was climbed for the first time in 1864 by Mr. Sowerby, and 9 days later by a party of the Swiss Alpine Club. Starting from the new inn at Waldibalm, a path ascends the slopes leading to the châlets of Alpgnover, standing on a terrace that runs for miles along the N.

side of the valley. A very beautiful path leads thence to Bristen by Bernertsmatt. To climb the Ruchi it is necessary to reach the glacier on the E. side of the peak dividing it from the Klein Ruchi. The ascent is laborious. The summit looks sheer down into the northern Brunnithal leading to Unter Schächen.

The *Düssistock* (10,702′) appears to have been first attained in 1842 by M. Escher v. der Linth, and a few times since that date. It rises very boldly from the S. side of the Hüfi Gl., and on the opposite side overlooks the *Tschingel Glacier*, a considerable ice-field occupying a high plateau between Val Cavrein and the Brunnithal. The peak is reached with little difficulty by ascending from this glacier by the ridge leading N. to the summit.

Route C.

HOSPENTHAL TO OBERGESTELEN, BY THE FURKA PASS.

	Hrs.' walking	Eng. miles
Realp . . .	1½	4
Furka Pass . .	2½	6
Rhone Gletscher Inn	2	4⅓
Obergestelen . .	2	5½
	8	20

Diligence from Andermatt to Brieg daily in 12 hrs.

The Furka Pass connects the head of the valley of the Rhone with that of the Urserenthal, which, as mentioned in Rte. A, contains the main source of the Reuss. This is the natural course for those who would pass from the Upper Valais to the road of the St. Gothard, and since the new carriage-road over the pass has been completed, it is more than ever frequented by tourists. In fine weather the view from the top compensates those who pass this way for the tedium of the ascent from Hospenthal, which is monotonous and uninteresting; but the Susten Pass (§ 25, Rte. E) affords a far more attractive route for those who wish to pass from the valley of Hasli to that of the Reuss.

Leaving the St. Gothard Road (Rte. A) at Hospenthal, the traveller follows the new road along the nearly level floor of the Urserenthal, by the rt. bank of the Reuss, till this is crossed about ¼ hr. below

Realp (Inns: Hôtel des Alpes, good; Zum Realp Hospiz, formerly used as a hospice, excellent wine. The hamlet is 5,034 ft. above the sea, only 246 ft. higher than Hospenthal. For the Lochberg Pass, leading nearly due N. from hence to the chief hamlet in the Geschenenthal, see § 25, Rte. H.

[A short distance above Realp, on the S. side of the valley, is the opening of the *Muttenthal*, an alpine glen, deserving more attention than it has yet received from travellers. It is divided into two main branches, both leading to glaciers which are the most considerable in the St. Gothard range. The SW. branch, retaining the name Muttenthal, leads to some châlets (6,949) close to the foot of the *Mutten Glacier*. The range enclosing the glacier sinks but little below 10,000 ft. but a pass might doubtless be effected to the Gerenthal, through which the traveller could descend to Oberwald. The S. branch of the Muttenthal terminates on one side in the *Wyttenwasser Glacier*. Farther to the E. it may probably be no difficult thing to traverse the main chain immediately W. of the Pizzo di Vinei, and to descend to the village of Bedretto. The ridge must be about 9,000 ft. in height.]

Above Realp the road to the Furka begins to mount, at first gently, then by steep zigzags up the treeless slopes on the N. side of the valley. When it has attained a height of about 6,800 ft., it winds along ascending very gently. There is little to attract attention, except in the early summer, before the cattle have been turned loose on the alp, when it is adorned by a profusion of flowers including most of the characteristic species of the Central Alps. Towards the summit there are almost always some patches of snow beside the road. In ascending from Realp nearly 3 hrs. must be allowed, but in descending

2 hrs. suffice for the distance between that place and the

Furka Pass (7,992′). The ridge is very narrow, and the traveller is suddenly presented with a view that makes him forget the dullness of the ascent. The Oberland Alps are here seen from an unaccustomed point of view, and the Finsteraarhorn especially presents an aspect of rare grandeur. Within the last few years an Inn has been opened at the summit, and supplies very fair accommodation at not unreasonable prices. The pass lies between two pointed peaks whose outline offers some likeness to a pitchfork; and the name is more appropriate than in many other cases in the Alps where it recurs under the forms Forcola, Forcletta, Forclaz, Furgge, &c. The peak lying S. of the pass is often ascended for the sake of the view by persons who halt at the Inn. It is there called *Furkahorn*, but is apparently the same that is named on the Federal Map Blauberg (9,091′)—not to be confounded with the higher mountain so called, E. of the St. Gothard Pass.

A more considerable expedition is the ascent of the *Galenstock* (11,956′). This has been made several times of late years, and well merits the exertion; but it is fit only for practised mountaineers with a competent guide. Some travellers who have attacked the mountain from this side without proper precautions have narrowly escaped very serious accidents. See also § 25, Rte. F.

The peak of the *Mutthorn* (10,181′), lying due S. of the pass, in the ridge dividing the Gerenthal from the Muttenthal, was ascended in 1865 by Messrs. Sedley, Taylor, and Montgomery, in 4½ hrs. from the Furka inn, returning thither in 3 hrs.

The descent on the W. side of the pass is much steeper than the ascent. Pedestrians pressed for time may follow the old path; but by keeping to the carriage-road, and merely cutting off the corners between one zigzag and the next, they gain a really magnificent view of the great ice-fall of the Rhone Glacier. This soon comes into view, but it is only after descending about ½ hr. that the full extent of that grand ice-stream is disclosed. Towards the bottom of the descent it is better to follow the old path. For a fuller notice of the Rhone Glacier, see § 24, Rte. C, and § 25, Rte. F. [A mountaineer bound for the Grimsel may traverse the steep face of the mountain NW. of the Furka Pass, cross the Glacier above the ice-fall, and reach the Hospice by the course indicated in the last-mentioned Rte. For this expedition a guide is indispensable.] Towards the foot of the descent travellers usually make a slight détour to visit the lower end of the glacier. They are shown some springs of clear water that are considered to be the true 'Sources of the Rhone'— Germ. Rhone-Quellen. In summer the stream issuing from the glacier pours down a far more abundant current; but in winter, when the latter dwindles to a rivulet, the springs continue to flow as copiously and with the same temperature as in summer.

The new Inn (Zum Rhone Gletscher), opened by Seiler of Zermatt, at the junction of the path leading to the Grimsel with that leading down the valley of the Rhone, is very well kept. See § 24, Rte. C. The way to Oberwald lies through a rocky defile, and the new road, if it robs the journey of something of its wildness, spares the pedestrian a very rough path. Pine-trees, that have rarely been seen since the traveller left Andermatt, here reappear. At *Oberwald*, where there is a decent Inn, the traveller attains the level of the Rhone valley. Carriages may be procured for Obergestelen (2 m.) Munster (6 m.), or Viesch (16½ m.).

[Mountaineers may well devote a day or two from Oberwald to exploring the Gerenthal, a neglected valley whose head is enclosed by a semicircular range of peaks, most of them exceeding 10,000 ft. in height. It is divided into two parallel branches, of which the northern —lying to the l. in ascending from Oberwald—is the most considerable.

On reaching the head of the valley the *Geren Glacier* is seen on the l., or NE., enclosed between the highest summits of the St. Gothard Group—the *Pizzo Rotondo* (10,489′), *Pizzo Pesciora* (10,246′), and *Kuhbodenhorn* (10,082′) to S. and SE., and the *Saashorn* (9,977′) to NW. Messrs. F. North and Rigby, keeping a course about due SE. from Oberwald, and avoiding the *Geren Glacier*, found an easy pass on the SW. side of the *Kuhbodenhorn*, leading in 5 or 6 hrs. to *Hospital all' Acqua*. Other passes between the peaks surrounding the Geren Glacier doubtless remain to be explored. The three first-named peaks lie in the main chain dividing this valley from the head of the Val Bedretto, and a pass may doubtless be found which would be more interesting for a mountaineer going from the Oberland into Italy than the Nufenen or the St. Gothard.]

Route D.

OBERGESTELEN TO AIROLO, BY THE NUFENEN PASS.

9 hrs.' walking. About 23 Eng. miles.

This is the most direct way from the head of the valley of the Rhone to that of the Ticino, but cannot be called a very interesting path, being in every way inferior to the Gries Pass, which is approached by the same path. In fine weather a guide is scarcely needed.

The way from Obergestelen (or Münster) to the head of the Eginenthal is described in § 29, Rte. A. At the châlets of Altstaffel, the highest in that valley, a path bears to the l., mounting by zigzags about due E. to the

Nufenen Pass (8,009′), called on the Italian side Passo di Novena. Unlike the neighbouring pass of the Gries, where the peculiar conformation of the ground has produced an extensive glacier at the top, this at an equal height is covered with grass, usually with a few patches of snow on the Tessin side. Nearly 4 hrs. are required for the ascent from Obergestelen, and rather more than 2 hrs. for the descent to Hospital all'Acqua; travelling in the opposite direction, 3½ hrs. suffice for the ascent, and 2½ hrs. for the descent to Obergestelen. The view of the Oberland Alps from the summit is fine. The path slopes at first very gently towards the Italian side, and then descends rather more rapidly across the wide pastures of the Alpe di Cruina, occupying the upper end of the Val Bedretto, which extends for about 13 m. hence to Airolo. Near the châlets of Cruina (6,647′) the main branch of the Ticino is formed by the union of the streamlet from the pass with a more considerable torrent issuing from the *Val Corno*, and apparently fed by a branch of the Gries Glacier, which also supplies a feeder to the Rhone and the Tosa. Here the main path crosses to the l. bank, along which it runs for many miles. The track leading from the Val Formazza by the Pass of San Giacomo (§ 29, Rte. B) is joined as the traveller reaches *Hospital all' Acqua* (5,266′), originally designed as a refuge for poor travellers. It is a poor, dirty, and not cheap inn, where travellers will pass the night only in case of need. Here commences the permanently inhabited portion of the Val Bedretto Few valleys in the Alps have suffered so severely from avalanches. Though the pine forests which clothe the slopes might seem to offer some protection, the inhabitants have not found any part of the valley where they can promise themselves security against fresh disasters. About 1 hr. below all'Acqua is *Bedretto* (4,610′), the highest village in the valley to which it gives its name, with a poor Inn. A buttress of strong masonry is erected to protect the church from the fall of avalanches. To the NW. is seen the *Glacier of Pesciora*, lying on a high shelf beneath the peak of the *Pizzo Pesciora* (10,246′). Save the Pizzo Lunghino, at the head of the Engadine (§ 35), this is the only mountain in the Alps which sends down from its flanks streams that flow

into three seas. On this side the waters flow into the Adriatic through the Ticino and the Po, on the W. side, to the Mediterranean, through the Rhone, and on the NE. side, to the North Sea, through the Reuss and the Rhine.

The path to Airolo crosses the river before reaching Osasco (4,367′), about 1½ m. below Bedretto. This hamlet was destroyed by an avalanche in the last century. Here the paths from the Val Bavona and Val Lavizzara, mentioned in § 32, Rtes. C and D, enter the Val Bedretto. The next hamlet is Fontana; the main path keeps to the rt. bank until close to Airolo, where it recrosses the Ticino and reaches that village (Rte. A) by a short ascent. Those who are bound for the Pass of St. Gothard, and do not care to go by Airolo, should cross the river at Fontana, follow for some distance a track along the l. bank, and then mount the slopes to the l. till he joins the high road as it enters the ravine of Val Tremola near the new Refuge, about 1,700 ft. above Airolo.

Route E.

AIROLO TO ANDERMATT, BY THE VAL CANARIA.

About 8 hrs.' walk.

The *Val Canaria* is a wild and unfrequented glen descending from the NE. towards Airolo, and pouring its torrent into the Ticino about 1 m. below that village. This offers a way to the valley of the Reuss more interesting to the mountaineer than the St. Gothard road. The ground is rough, and the path scarcely, if at all, traceable, so that it is advisable to take a guide. After passing a hamlet called Valle, about 1 m. from Airolo, the path fairly enters the valley and mounts for a considerable distance by the rt. bank of the torrent. The scenery is of a bolder character than in most of the neighbouring valleys. After passing a few châlets, which are not occupied long, as the valley supplies but scanty pasturage, the traveller reaches its head, a wild hollow enclosed between ridges that support small masses of glacier. Here there is a way to Dissentis, ascending due E. from the head of the Val Canaria, and descending through the Val Cadelim, which joins the Medelserthal (Rte. F) a little above Sta. Maria. This is very little used, because the course from Airolo to Sta. Maria, described in Rte. G, is more direct. There is another way to the valley of the Vorderrhein, apparently somewhat difficult, though Prof. Theobald informs us that cattle are driven that way every year. This is by a glacier or field of névé on the S. side of the *Piz Ravescha* (9,875′). By this way it is possible to reach the *Val Cornära*, an affluent of the Vorder Rhein noticed in § 27, Rte. C. The writer has no doubt as to the possibility of passing the ridge in that direction, but, as seen from the head of the Val Canaria, it appeared to him steep, and without the slightest trace of path.

The way to Andermatt lies due N. from the head of the valley to the *Nera Pass* (about 8,000′?) lying between the Piz Alv and the Piz Ravescha. The descent lies NW. to Andermatt through the *Unteralpthal*, a glen now sometimes visited by strangers, who take it in the way from that village to the top of the Badus. (See Rte. A.)

Route F.

DISSENTIS TO BELLINZONA, BY THE LUKMANIER PASS.

	Hrs.' walking	Eng. miles
Platta	2	6
Sta. Maria	3	8
Casaccia	1¼	4
Olivone	3	8
Dongio	2½	7½
Biasca	2¼	6¾
Bellinzona	4½	13½
	18¾	53¾

The *Lukmanier Pass* (Ital. Passo di Lucmagno) is the lowest in the main chain of the Alps between the Mont Genèvre and the Maloya. Though known from the earliest times, and to some extent frequented in the Roman period and during the middle ages;

this, like the two above-named passes, has hitherto failed to become one of the main channels of communication between the people at opposite sides of the Alps, and for the same reason—because each of them forces the traveller to take a very circuitous route between the point where he enters the Alps and that where he issues from them into the plain of N. Italy. The Genèvre and Maloya correspond to points of dislocation in the main chain, where ranges formed about different axes of elevation meet each other. In the case of the ranges on either side of the Lukmanier, the direction in which they have been raised is not very evident, and the pass itself appears to be produced by denudation acting on incoherent materials rather than by forces that have determined the general configuration of the mountains.

This pass, after having fallen into comparative disuse since the completion of the high road by the Bernardino, is destined to assume new importance by the construction of a railway to connect Lombardy and the port of Genoa with the Lake of Constance and the German railways radiating from its shores. The details of the line to be selected have been much debated, and may be liable to further modification, but, in spite of local pretensions and jealousies, it seems certain that the natural conditions which make this the easiest and most direct line for railway communication between central and western Germany and the Mediterranean must ultimately prevail over other considerations.

Immediately S. of *Dissentis* (§ 27, Rte. A), the *Medelser Rhein*, or Middle Rhine, issues from the *Medelserthal*, a deep valley which marks the limit between the alpine group of the Adula (§ 31) and that of the St. Gothard. The mule-path from Dissentis, after crossing the Vorder Rhein above the junction of the Medelser Rhein, mounts past the old church of St. Agatha, and winds upwards through a wood to the village of *Mompé Medels* (3,963′), commanding a fine view over Dissentis, the main valley of the Vorder Rhein, and the mountains to the N., while in the opposite direction are seen the Medelser Glacier and some of the high peaks at the head of the Medelserthal. Soon after passing the village the path turns a projecting angle of the mountain, and the traveller has laid before him the upland valley through which his route lies to the pass. It presents an agreeable picture of alpine pastoral life, being bright with green meadows and some patches of rye, potatoes, and flax. Several small villages, each with a slender steeple, contain the sparse population, and pine forests clothe the middle slopes of the surrounding mountains. Leaving Curaglia to the l. the pass crosses the main torrent, and in 2 hrs. from Dissentis reaches

Platta (4,528′), the principal place in the valley. The *curé* receives strangers. The old path to this place is now almost impassable, through neglect, but it is the more interesting. This follows the deep ravine, called Conflons, where the M. Rhine forms two fine waterfalls. Above the defile the old path soon reaches *Curaglia*, and then joins the beaten track to Platta.

[The way to the Medelser Glacier by the Plattas Alp has been noticed in § 27, Rte. C. By that way Messrs. Moore and Walker effected a new pass to Olivone, an interesting variation on the Lukmanier. Following the track to the Lavaz Joch (§ 31, Rte. D) for 50 m., they then ascended in $2\frac{1}{4}$ hrs. the E. branch of the Medelser Gl., to a depression E. of the *Cima Camadra* (10,509′), called by them *Camadra Pass* (about 10,000′). An almost unchecked glissade of over 3,000 ft. took them down in 35 min. to Val Camadra, near the foot of the Greina Pass (§ 31, Rte. D). Ghirone was reached in $1\frac{3}{4}$ hr., and Olivone in 1 hr. 20 min. more.]

The path to the Lukmanier follows the rt. bank, passing the hamlets Fuorns and Acla to *Perdatsch*, a small hamlet at the junction of *Val Cristallina*.

[This alpine glen may well occupy a

mountaineer for an excursion of one or two days from Dissentis. It derives its name from the quartz crystals found in the granite, or gneiss, of the surrounding Medelser Gebirge. The entrance to the glen is very picturesque. Huge moss-grown blocks of granite, amidst which may be detected the delicate bells of the *Linnæa borealis*, lie in the open spaces between masses of pine forest. To the W. is the *Scopi* (10,499), a rugged pinnacle of slate, containing belemnites. The Val Cristallina divides into two branches. That running S., called *Val Casaccia*, is very short; the other, much longer and more interesting, is called *Ufiern* (the Romantsch form of Inferno), from the dark and savage character of its scenery. On its N. side rise several high peaks, such as *Piz Puzata* (10,262′), *Piz Cristallina* (10,345′), and *Cima Camadra* (10,509′). The first of these was ascended by Placidus à Spescha in 1782. The descent may be made on the side of Platta to the Medelserthal. Olivone may be reached from a SE. branch of this wild glen by the *Ufiern Pass* (7,887′). The way is by a faintly marked track passing near a small tarn, 7,572 ft. in height. On the opposite side the stream enters the *Lago Retico*, and runs down to the *Val di Campo*. This enters Val Blegno a short way above Olivone, which is 3½ hrs. from the pass. Another variation on the ordinary route was struck out by Mr. Sowerby in 1865. Having slept at the Plattas Alp, he crossed the ridge to the S. by a low col, and in 1¾ hr. gained the névé of the W. arm of the Medelser Glacier. An ascent of 2 hrs. took him to the *Forcellina Cristallina* (about 9,800′), a snow col between the Piz Cristallina and a higher point marked 3,175 on the Federal Map. Descending over névé and rocks, and bearing always to the l., he reached in nearly 2 hrs. more the summit of a nameless pass 8.727 ft. high, at the extreme E. end of the Ufiern glen. 3½ hrs. took him down to Val Camadra, and thence to Olivone.]

Close to Perdatsch the Middle Rhine forms another fine waterfall, and the path begins to ascend rather more steeply than heretofore. Passing two hospices, or refuges for travellers, formerly erected by the abbots of Dissentis, the first called St. Gion, the second St. Gall, the traveller reaches the highest and principal hospice, called *Sta. Maria*, 5,925 ft. above the sea. Each of these is furnished with a bell, which is tolled during the snow-storms with a view to guide passing travellers. These refuges afford bread and wine, and, in case of need, beds for the night; but the quarters are not tempting. The ascent of the Scopi may be made from hence in 5 hrs. It is somewhat fatiguing, but rewards the traveller by a fine alpine panorama. At Sta. Maria the Medelser Rhein is formed by the confluence of four torrents. The chief of these, and that which is considered the true source of the stream, issues from the *Val Cadelim*, which opens about due W. between the *Rondadura* (9,902′) and the *Pizzo dell' Uomo* (9,022′). At the head of this glen are several small lakes, of which the largest is called Lago Scuro (8,048′). The way to Val Canaria referred to in Rte. E. passes a lower lake, called Lago Lisera (7,690′), but bears to the l. before reaching the Lago Scuro. A second torrent descends to Sta. Maria from the Passo dell' Uomo, noticed in the next Rte, and a third from a ravine on the flanks of the Scopi; but the deepest depression in the ranges enclosing the head of the valley lies between the two last, about due S. from the Sta. Maria, and is that followed in the present Rte.

The ascent to the *Lukmanier Pass* from Sta. Maria is quite trifling, the height of the summit level being not more than 6,289 ft. (?)—some measurements make it even lower. It is reached in ½ hr. from Sta. Maria. The friable gypsaceous rock over which the pass is carried has a white lustre that causes it to be sometimes mistaken at a distance for snow. Etymologists have

endeavoured, from this circumstance, to frame a derivation for the name of the pass; but it appears that the origin is from the name Sancta Maria de Luco Magno, once given to the oratory on the N. side. All the traces of the forest which must once have existed there have now disappeared. From the wooden cross that marks the summit there is a view of the main mass of the Adula Alps, crowned by the peak of the Piz Valrhein. The granitic ridges that enclose the head of the Val Blegno exhibit on a smaller scale the pinnacled and serrated forms familiar to the Chamouni tourist.

The rapidity of the descent on the S. side of the pass affords a contrast to the gentle northern slope. Though steep, the vertical height of the first stage is not great, and in $\frac{3}{4}$ hr. or less the traveller reaches Casaccia, a poor hospice (5,978′), at the head of the *Val Zura*, a tributary glen of the Val Blegno. This descends in successive steps that follow in rapid succession as the traveller approaches the junction with the main valley. The first of these leads to the châlets of Bronico (5,466′). Two more steps in the descent lead in 2 hrs. from Casaccia to *Camperio* (3,929′), a hospice whose foundation, as well as that of Casaccia, is attributed to S. Carlo Borromeo. The first view of the *Val Blegno* from near this place is very beautiful. It forms a deep cleft between the main range of the Adula and the less lofty ridge that separates it from the Val Leventina. There are few alpine passes in which the traveller is brought by a more abrupt transition from a region so stern and wild as the head of Val Zura into a valley so rich and animated as that into which he here enters. The lower part of the Val Zura is commonly called Val Campra. The track is carried along the l. bank by *Somascona*, where it becomes passable for country chars, and in 1 hr. from Camperio descends into Val Blegno exactly opposite.

Olivone (2,927′). There are several poor Inns, the best of which is kept by Stefano Bolla. It is on the rt. bank of the stream, tolerable, but dear. Nearly 6 hrs. must be allowed for reaching the Lukmanier from Dissentis, and $3\frac{1}{2}$ hrs. for the descent. In consequence of the difference of level, nearly 5 hrs. will be taken in the ascent from Olivone, and about the same time for descending to Dissentis.

A diligence plies daily between Olivone and Biasca. It leaves the latter places at 3.30, arriving at 8 A.M., and returns from Olivone at 3.30 P.M., descending the valley in 3 hrs.

About Olivone the chestnut makes its appearance, soon becoming the predominant tree of the valley. During the descent the vine and fig-tree appear in succession, and announce to the traveller his arrival in a more genial climate. Close to Olivone the stream of the *Brenno* is formed by the junction of the torrent from the northern or main branch of the valley, called Val Camadra, with that issuing from the Lukmanier Pass through the Val Campra. A tolerably good road leads down the Val Blegno along the l. bank of the Brenno, from Olivone to its junction with the Val Leventina at Biasca. It descends gently by Aquila to Dangio, a village lying at the W. base of the Piz Valrhein, seen through the *Val Soja*, a ravine opening l. of the road. Farther on is a small establishment with mineral waters, called *Acqua Rossa*, offering tolerable accommodation. *Dangio* (1,513′), is $7\frac{1}{2}$ m. from Olivone, and 3 m. farther is *Malvaglia*, one of the chief villages in the valley. Before reaching that place the road crosses the *Lorina* torrent as it issues from the *Val Malvaglia* to join the Brenno. This wild glen originates on the S. side of principal peaks of the Adula. For the glacier passes practicable from its head to the sources of the Hinterrhein, see § 31, Rte. B. About 1 m. below Malvaglia is the junction of another torrent from the *Val Pentirone*. A path leads through it by a village of the same name to a pass (6,955′) in

the ridge dividing Val Blegno from Val Calanca, and descends to the hamlet of Rossa in that valley. Below the junction of Val Pentirone the road traverses a tract marked by the presence of scattered blocks of stone and irregular hillocks that are the memorials of one of the most destructive events recorded in alpine history.

In Sept. 1512 a bergfall from the NW. end of the ridge of the *Pizzo Magno* (7,877′) barred across the course of the Brenno. The barrier formed a lake that continued to increase until the spring of 1514, when it suddenly broke its bounds, spreading devastation through the lower part of the Val Leventina, or Riviera, and even destroying a part of the town of Bellinzona, 15 miles distant. The bergfall has been attributed to an earthquake, but no such agent is needed to explain the phenomenon, and it is more likely that the fall should have occasioned any oscillation that may have been felt in the adjoining valleys. Less than 2 m. from the site of the bergfall is *Biasca*, where this road joins that of the St. Gothard (Rte. A).

Route G.

DISSENTIS TO AIROLO, BY THE PASSO DELL' UOMO.

5 hrs. to Sta. Maria—6 hrs. thence to Airolo. Foot-path.

This affords a pleasant way for the pedestrian going from the Vorderrhein valley to the S. side of the St. Gothard. As far as Sta. Maria the way from Dissentis (see last Rte.) is easily found without a guide; thence to Altanca it is advisable to take one, as the track is faintly marked, and it would be very unpleasant to be benighted on the heights near the pass. The day's walk is rather long, though free from difficulty.

From Sta. Maria a path leads due SW. through a depression called *Val Termine*. The ascent is easy, but considerably longer than that to the Lukmanier, and 1½ hr. is required to reach the summit of the *Passo dell' Uomo* (7,257′), lying S. of the *Pizzo dell' Uomo* (9,022′). The St. Gothard Alps abound in small lakes, but in no part of the range are they so abundant as in this neighbourhood. Not only in the upland valley-basins, but on plateaux and shelves of the steep sides of mountains, are these lakelets or tarns to be seen. One very small one lies close to the summit of this pass, which declines very gently on the W. side to a boggy plateau known as Piano dei Porci (6,959′). This leads to a highland valley, called *Val Piora*, where the scenery soon becomes more interesting. After passing the châlets of Piora the path skirts the small *Lago di Cadagna* (6,303′), into which a pretty waterfall tumbles from another lake lying on a higher shelf of the mountain. The stream descends abruptly to the level of another much larger lake — *Lago di Ritom* (5,971′). Surrounded with green pastures wherein stand several châlets, and enclosed between rugged granitic rocks, this presents a pleasing picture. The path now lies for some way along the rt. bank of the torrent, which descends towards the Val Leventina in a succession of waterfalls. At the third fall the path quits the stream and turns to the rt. along the slope of the mountain, at a great height above the Tessin and the road of the St. Gothard, which is seen at intervals. After passing the hamlets of *Altanca* (4,567′) and *Brugnasco*, the traveller descends rather rapidly to *Madrano* (3,780′), a village standing above the confluence of the Val Canaria with the main valley. There is a frequented path from thence to Airolo.

The traveller wishing to see something of Val Canaria (Rte. E.) may reach Airolo nearly as soon as by the course above described, by bearing to the rt. from the Lago di Ritom and crossing a low pass (6,959′) leading into that wild valley.

A traveller bound from Olivone to Airolo may mount towards the E. from Casaccia, to a col—*Passo di Zura*?

(7,792′)—at the head of Val Zura (Rte. F), and join the track over the Uomo Pass near the top, thus reaching his destination in from 9 to 10 hrs.

There is also a path from Casaccia to Faido which would enable a traveller starting from Olivone or Dissentis to reach that place by a much shorter way than by the road. From 4½ to 5 hrs. should be allowed for this pass; so that those who start from Dissentis must count upon a long day's walk.

SECTION 31.

ADULA DISTRICT.

The group of snowy peaks lying between the two principal branches of the Rhine were known in the Middle Ages by the names Mons Aquila or Mons Avium. From the Romantsch form of the first comes the name *Adula*, by which this portion of the Lepontine Alps is most commonly known, while the second has originated the German designation Vogelberg. To judge from the meridional direction of the main ridge and the principal valleys, the predominant tendency of the forces that have formed this part of the Alps must have been transverse to that which determined the direction of the greater chains of the Pennine, Bernese, Tödi, and Rhætian Alps. The watershed between N. Switzerland and Italy has here no determinate direction, and exhibits a dislocated appearance, as though its position depended on the accidental juxtaposition of separate masses of mountain. There is, however, one remarkable valley—that of the Rheinwald—whose parallelism to the Tödi chain seems to show that the same forces which have acted so widely elsewhere have been present here, though obscured by other contending influences.

The peaks of the Adula form an irregular group, all the highest lying in a cluster not more than 3 m. distant from the centre, which may be fixed at the foot of the Rheinwald Glacier. From the central group a considerable range extends due S. more than 10 m. between Val Blegno and Val Calanca, gradually diminishing in height from the *Fil Rosso* (10,066′) to the *Pizzo di Clara* (8,917′). A parallel ridge connected with the main mass divides the Val Calanca from Val Mesocco; it surpasses but in few points the height of 9,000 ft. The northern ridge, longer but less regular than the first-mentioned, extends fully 15 m. from the central group to the Piz Nädils, over Somvix in the Valley of the Vorderrhein. Three branches diverge to the ENE. from the main N. and S. ridge. The most important is that extending from the Piz Valrhein, the central and highest summit, to the Piz Beverin over Thusis. With this are connected the secondary ridges of inferior height that enclose the Savienthal. Parallel to this, a short ridge, including several summits over 10,000 ft. in height, extends from the Terri (10,338′) to the Piz Regina (9,427′). Rather longer is the ridge diverging from the Piz Cavel (9,689′) N. of the Disrut Pass, and terminating in the Piz Mundaun (6,775′) over Ilanz. In addition to the proper group of the Adula, it is necessary to include in this Section the less-important group of the *Medelser Gebirge*, an outlying mass, partially separated from the first by the Somvixerthal and the Greina Pass, and cut off from the St. Gothard group by the much deeper depression followed by the track of the Lukmanier. This accessory group includes four or five peaks that range from 10,300 to 10,500 ft. Thus defined, the limits of the district included in the present Section are the road of the Bernardino from Reichenau to the Val Leventina, that of the Lukmanier from Dissentis to its junction with the last at the opening of the Val Mesocco, and the Valley of the Vorder Rhein from Reichenau to Dissentis.

The fact that this portion of the Alps should have been so long neg-

lected by travellers must be accounted for by the want of information, and the absence of any central point offering such accommodation as tempted tourists to explore the country for themselves. Although but two of the summits of this group exceed 11,000 ft. in height, the glaciers are on a very considerable scale, and the many ramifications of the valleys on the N. side offer scenes worthy of comparison with those which attract crowds of strangers elsewhere in the Alps. A mountaineer finds tolerable quarters at St. Peter in the Valserthal, 4,095 ft. above the sea, the most central point for excursions in that part of the range. In the Somvixerthal the Tenniger Bad (4,077′) also supplies sufficient accommodation, but the position is not so attractive. The village of Hinterrhein (5,328′) is the best point for approaching the great glaciers that give birth to the chief branch of the Rhine, but it is inconveniently distant from the points most interesting to strangers.

The district included in this Section is contained in Sheets 14 and 19 of the Swiss Federal Map. The far larger portion belongs to the Grisons, where Romantsch is the prevailing dialect. In the Val Mesocco and Val Calanca, belonging to that canton, and in Val Blegno, forming part of Tessin, Italian is almost exclusively spoken.

Route A.

COIRE TO BELLINZONA, BY THE BERNARDINO PASS — VIA MALA.

	Swiss leagues	Eng. miles
Reichenau	2	6
Thusis	3½	10½
Andeer	2¾	8¼
Splügen	3	9
Hinterrhein	2⅓	6¾
San Bernardino	4¼	12¾
Mesocco	3	9
Cama	3½	10½
Bellinzona	3¾	11¼
	28	84

A post-road, traversed by diligence, sometimes changing carriage at Splügen, in 16 hrs. from Coire to Bellinzona. Fare in coupé, 28 fr.; in interior, 24 fr. 10 c. Carriages may be hired at Coire, Splügen, or Bellinzona. Usual charge for a carriage and two horses from Coire to Splügen, 60 to 70 fr.—from Coire to Bellinzona, 140 to 160 fr. See observations as to voituriers in § 30, Rte. A. In posting, the same carriage may be taken from Coire to Splügen; but from that place to Bellinzona it is, or was, necessary to change carriage at each post station. There is some difficulty in giving the exact distances by this Rte. In posting, the distances charged are excessive, amounting in all to 33¾ Swiss leagues. Those given in some guidebooks seem to have been partially reckoned by the time required for a foot-passenger availing himself of short cuts. In some parts of the road, especially between Hinterrhein and Mesocco, these reduce the distance by nearly one-half.

The defile of the Via Mala, which serves alike for the approach by the Bernardino Pass to the Lago Maggiore, and by the Splügen (§ 33) to the Lake of Como, is deservedly one of the most famous in the Alps, and the remainder of the road here described abounds in striking scenery that will reward those who traverse it in a leisurely manner. Pedestrians should walk from Thusis to Mesocco, if not to Roveredo. There are good inns at Thusis, Andeer, Splügen, and San Bernardino, and tolerable accommodation at several other places on the way.

The path from Coire to Reichenau, lying for half the distance by the l. bank of the Rhine, is noticed in § 27, Rte. A. The high road follows the rt. bank, passing the pretty village of *Ems*. Some conical masses of earth and gravel seen near here probably have the same origin as those of the Eringerthal (§ 19, Rte. A), but the popular legend has given them the name Tombels da Chiavals, derived from the belief that they cover the

remains of a prodigious number of horses that died of cold when the Emperor Constantius led his army against the Alemanni across the Bernardino Pass, A.D. 354. The road crosses a very fine wooden bridge, of 254 ft. span and 80 ft. above the river, just below the junction of the Vorder- and Hinter-Rhein. On the l. bank stands

Reichenau (Inn: Adler, good and reasonable), a small place with some large buildings. The Castle, now belonging to one of the Planta family, is visited by strangers for the sake of the memorials of King Louis Philippe, who acted here as schoolmaster during the Reign of Terror under the assumed name of Chabot. From the pleasure-grounds there is a good view of the meeting of the two branches of the Rhine. A roofed bridge across the Vorder Rhein (1,923′) carries the road to the l. bank of the Hinter Rhein. Rather more than 1 m. from Reichenau is *Bonaduz* (Inn: Krone). Many ancient castles defended the entrance of the *Domleschgerthal* (Rom. Val Tomiliasca), as the Valley of the Rhine from hence to Thusis is called. The most considerable of these is that of *Rhäzuns*, standing on an isolated rock to the rt. of the road about 2 m. from Reichenau. Its origin dates from a remote antiquity, and after belonging in succession to Austria, Bavaria, and France, it is now inhabited by a private proprietor. On the opposite bank of the Rhine the two castles of Juvalta and Ortenstein are especially picturesque objects. The rich cultivation of the valley, enlivened by numerous villages and the memorials of a past age, presents a striking contrast to the lofty and rugged ranges that enclose it on either side. About 8½ m. from Reichenau is *Katzis* (Inn: Kreuz), a village standing in one of the most picturesque positions in this beautiful valley. To the SE. opens the gorge of the Albula, or Oberhalbstein Rhine, with some of the snowy peaks of the Albula group (§ 35) in the background. Two miles farther the Domleschgerthal comes to an end at

Thusis (Inns: Hôtel Via Mala, very good; Goldener Adler, or Post, also good; H. and Pension Rhætia, looks well; several pensions). The best wine to be found at hotels in this part of Switzerland is that of the Val Tellina (Germ. Veltlin). The finer qualities when pure are excellent. Having been burned down four times—the last in 1845—Thusis is a new and clean village, 2,448 ft. above the sea, and by the beauty of its position, and the many interesting excursions within reach, may well detain the traveller for a few days. It stands close to the confluence with the Rhine of the destructive torrent *Nolla*, descending from the N. side of the Piz Beverin, whose unruly floods, laden with sand and shattered slate, have often done much damage in the neighbouring portions of the main valley.

The first excursion for those who do not intend traversing the Splügen or Bernardino, is that to the Via Mala. Charge for a char through the defile and back, 5 fr.; if taken as far as Andeer, 8½ fr. Of the shorter walks in the neighbourhood, the following may be mentioned:—

The Castle of *Hohen-Rhätien*, or Rhäalt, standing above the opposite bank of the Rhine, in the angle between that stream and the Albula. The foundation of this, as well as Rhäzuns near Reichenau, is attributed to the mythical king Rhaetus, and accurate chronologists have fixed the date at 587 B.C. This may be easily combined in a short walk with the ruins of Campi, even more finely situated, and reached by a pleasant walk through a wood.

On the l. bank, and still nearer Thusis, are the castles of Tagstein. Ober Tagstein is a tower in a very commanding situation, and rather difficult of access. Nieder Tagstein is a larger building recently restored and made habitable. It is reached by a delightful walk, commanding exquisite views.

The gorge of the Nolla offers a very striking scene. It is best seen from the pastures of Thalaus, a short distance above Thusis.

Of longer expeditions, one of the most interesting is the ascent of the Stätzerhorn (see § 27, Rte. C), which may be reached from hence in about the same time as from Coire.

The ascent of the Piz Beverin (see below) is more conveniently made from Andeer.

An excursion is often made to Savien Platz (Rte. H) by the hamlets of Tschappina and Glas. This is a walk or ride of 4 hrs., passing immediately under the Piz Beverin. Charge for a horse going and returning, 15 fr.

The path to Tiefenkasten, by the Schyn Pass, is described in § 35, Rte. B. The ruins of Hohen Rhätien and Campi may be visited on the way.

From many points near Thusis the main valley of the Rhine seems to be completely closed by the mountains that rise to the S., and it is only from some spots that the cleft is distinctly seen that opens the famous defile of the *Via Mala*. The Romans carried a paved track at a great height over the mountains on the l. bank, and it was not until the fifteenth century that the first attempt was made to drive a path through the defile, which received its name from the many fatal accidents that occurred to passing travellers. In the last century the path was improved, and two stone bridges for the first time spanned the chasm. The present road, safely traversed by carriages at all seasons of the year, was constructed in 1822, by the engineer Pocobelli, in connection with the road over the Bernardino Pass, made under his direction. A pedestrian starting a few minutes before a carriage, may easily reach Andeer, or, at all events, pass through the Via Mala, before he is overtaken.

This extraordinary defile opens ½ m. above Thusis, and extends about 4 m. Some other alpine defiles described in this work are deeper than this, and there are a few equally narrow; but there is none in which the two conditions are combined so fully as here. This is literally a cleft, with walls at least 1,500 ft. in height, and so narrow that in some places it is not more than 30 ft. wide at 200 or 300 ft. above the stream.

The entrance to the Via Mala is abrupt, and in a few minutes the traveller passes from the open sunny valley to a rock-bound prison, where a mere strip of sky is visible, and the only tokens of life are a few weather-beaten pines clinging to the crags hundreds of feet above his head. Before long he reaches the most impassable part of the cleft—the so-called Verlorenes Loch. Even after a track had been opened through the upper part, it was necessary to avoid this passage by a long and steep ascent over the shoulder of the mountain to the rt. The present road for the first time penetrated the Verlorenes Loch by a tunnel 230 ft. long, which is approached by a ledge excavated by blasting the hard slaty rock. For nearly ¼ m. the road is carried along the face of a precipice all but absolutely vertical. In some places it is so narrow that it is not easy for two carriages to pass, but a strong parapet wall gives a sense of security to nervous travellers. After traversing this first stage of the defile, the rocks recede a little, and form a small circular basin wherein stands a solitary house, the post-office of a village called *Rongella*, at a great height on the mountain to the W., which is accessible by a very steep path. That was the ordinary passage for travellers descending from the upper valley to Thusis, up to the early part of the present century. In a few minutes beyond the lonely house, the road again plunges into the chasm through which the Rhine pursues its furious course, and the scene becomes, if possible, more impressive than before. The first bridge crosses the stream at a point where the rocks are less nearly vertical than elsewhere, and some alpine flowers enliven the sombre aspect of the scene; but the gigantic walls soon

close together again, and at the Middle Bridge the climax of stern sublimity is attained. In approaching it, the road is for some distance covered by a wooden roof to afford protection from falling stones. The bridge stands about 230 ft. above the ordinary level of the stream; yet in the fearful storm and inundation of 1834, whose disastrous effects are still remembered throughout the E of Switzerland, the waters rose to within a few feet of the arch, and carried away a portion of the new road a little higher up in the defile. The workmen employed on the road earn a few sous from passing travellers by heaving masses of stone over the parapet, which fall with a crash into the raging torrent below. The chasm is here so narrow that pine-trees carried down by avalanches are often caught in their descent, and remain jammed between the rocks at a great height above the stream. The space required for the road is again excavated by blasting in the face of the precipice. At one point passengers often climb a projecting rock, and, lying on their faces, peep over the edge, which absolutely overhangs the torrent. At the third bridge, about 130 ft. (?) above the Rhine, built to replace one that was carried away in the inundation of 1834, the traveller emerges from the Via Mala, and enters the *Schamserthal*, as the valley of the Rhine is called from hence to the defile of Rofla. The name is said to be derived from Sexamnes — Rom., Sesame — referring to the six mountain torrents that here unite in the channel of the Rhine. Barley and green crops are still grown here, but it is mainly a pastoral district, presenting a marked contrast to the rich cultivation of the valley between Thusis and Reichenau. On entering the comparatively open valley, the village of *Lohn* (5,191′) is seen on the slope of the mountain to the W. This lay on the ancient Roman road through the valley, 2,000 ft. above the present passage.

Zillis (3,061′) is a very ancient village, with a fairly good and cheap country inn, and a church dating from A.D. 940, 1½ m. above the opening of the Schamserthal. A house with rude fresco paintings retains a curious inscription in Swiss German, bearing the date 1590. An inscription by the side of the road, which keeps the rt. bank of the Rhine, records the completion of the new road through this part of the Alps, and conveys in classical Latin excellent advice not likely to be understood by those for whom it is intended. About 2 m. beyond Zillis is

Andeer (Inn: Hotel Fravi, very good and reasonable; some books and newspapers help to induce travellers to halt here for a few days). The neighbouring scenery is very pleasing; several excursions offer employment to the mountaineer; and the air at 3,212 ft. above the sea is more bracing than at Thusis. The neighbouring castles of Rinkenstein, Castellatsch, and Fardün may be visited. The last is connected with a local tale of lordly oppression and insult, and of peasant vengeance, similar in character to those recorded in many other parts of the Alps. A very pleasant walk may be taken through the lower part of the Val Ferrera; visiting on the way the falls of the Averser Rhein (§ 35, Rte. K). The ascent of the *Piz Curvèr* (9,761′) is occasionally made from hence, but a more interesting expedition is that to the

Piz Beverin (9,843′), said to command one of the finest views in this part of the Alps. Excepting the last peak, which is somewhat steep, the ascent is very easy, practicable for horses, and not unfrequently accomplished by ladies. Zillis is closer to the foot of the mountain, but has no tolerable Inn. 'Charge for a guide, 5 fr.; for horse and boy, 9 fr.; for a chaise-à-porteur, 6½ fr. for each man. The way is by Fardün, the village of *Mathon*, and the pastures of Nursin. On the W. side of the highest peak fine crystals of quartz are very abundant.'—[B.]

About 2 m. above Andeer is the junction of the Aversthal with the main valley. The lower part, called Val Ferrera, is well worth a visit. The valley is described in § 35, Rte. K. A fine fall of the Avers torrent may be reached by a détour of ¼ hr. from the high road. This mounts in zigzags the defile of *Rofla*, which reminds the traveller, though on a much less grand scale, of the Via Mala. The Rofla is perhaps more picturesque, but far less extraordinary and impressive. There is a fall of the Rhine here which is not in itself very notable, but forms a pleasing picture. The name Rofla is applied in Romantsch to other similar defiles, having the character of clefts through strata once continuous. M. Desor has proposed to adopt the term in geology as expressive of this class of rock-clefts. Above the Rofla the valley makes a sharp turn, bending to the rt., and mounting WSW. to the glaciers of the Adula. On the l. bank, connected with the high road by a wooden bridge, is *Sufers*, at the mouth of a glen descending from the *Grauhorn* (9,849′). After passing a short tunnel at a point where the valley is for the last time narrowed between projecting rocks, the traveller enters the highest portion of the valley, called *Rheinwald*. The absence of tillage, the extensive meadows and pastures girt with pine forest, the nearness of the surrounding snowy summits, all announce to the traveller approaching the Alps for the first time new conditions of climate and of human existence. After crossing to the l. bank of the Rhine, he soon reaches the chief village of the upper valley,

Splügen (Inn: Post, good, not cheap), at the junction of the two important roads of the Bernardino and the Splügen. The great size of the houses in the Grisons villages surprises strangers. They are built of wood, which is here very cheap, and serve not only for dwellings, but also as granaries and barns, where hay for the winter use of cattle is stored. It is not uncommon to turn part of the ground floor into stabling. Splügen stands 4,757 ft. above the sea, and is not clear of snow for more than five months in the year. Leaving the road to the Splügen Pass to cross the Rhine and commence the ascent, the road of the Bernardino follows the nearly level floor of the Rheinwald valley along the l. bank of the stream. In the gravelly soil left dry by the torrent many plants of the high Alps, such as *Artemisia mutellina*, &c., will be noticed by the botanist. The way lies amidst meadows, with a few scattered houses of dark pine wood, and the valley has a severe and silent aspect. About 4 m. from Splügen the *Areuethal* opens to the S. between the *Tambohorn* (10,748′) and *Pizzo Terre* (10,167′) to the E., and the *Einshorn* (9,649′)—locally known as *Piz Gradol* —and *Pizzo della Lumbreda* (9,768′) to the E. [An easy pass, shorter and scarcely more laborious than the road, leads through that glen in 4½ hrs. to San Bernardino. The path by the rt. bank is followed to the Reuen Alp. Crossing the torrent, an easy but pathless ascent leads to the *Passo di Vignone*, whence the descent lies through a short glen called *Val Vignone*.] Turning to the rt. from the road at the hamlet of *Nufenen*, the botanist will find along the course of the streamlet *Hieracium flexuosum*, *Phaca frigida* and *P. alpina*, with other interesting plants. 2½ m. farther is

Hinterrhein, the last village in the valley, 5,328 ft. above the sea. There is a poor inn at the Post, where a mountaineer may rough it for a day or two. Like most of the village inns in high alpine valleys, this is very close, from the want of ventilation. The chief inducement to halt here is the expedition to the source of the Hinter Rhein, described in Rte. B. The way to Ilanz by the Valserberg is described in Rte. G.

The *Bernardino Pass*, separating the Rheinwald from the head of the Val Mesocco, was known to the Romans, and it is believed that the ancient paved track, used as a bridle-path, especially in winter, when it is freer from snow than the road, follows the

line of the ancient passage. The modern name was derived from a chapel dedicated to St. Bernardino of Siena, erected near the summit in the fifteenth century. The present road, with the still more difficult portion between Splügen and Reichenau, was constructed during the five years ending in 1823, and was the first carriage-road carried across the Alps between Switzerland and Italy. The Piedmontese Government contributed a large sum towards the cost of the road, which, though lying altogether in Swiss territory, served to connect Genoa with Switzerland and W. Germany.

Within ½ m. of Hinterrhein the road crosses a stone bridge, the first thrown over this branch of the Rhine, and immediately commences the ascent on the S. side of the valley by a series of zigzags. From the bridge to the summit of the pass the general direction is somewhat W. of S., while in descending to San Bernardino the course leans towards the E., so that the latter village lies due S. of Hinterrhein. In the ascent there are fine views of the Piz Valrhein and the surrounding peaks and glaciers. To the rt., or W. of the pass, is the *Marschollhorn* (9,521′), called by some writers Moschelhorn, by others Möschelhorn; while on the l. the *Einshorn* (9,649′) sends out a projecting ridge that terminates in the *Pizzo d'Uccello* (8,911′), rising immediately E. of the pass. The pedestrian may save much time by short-cuts across the zigzags in the first part of the ascent, but towards the top he will do better to follow the road. He may indeed shorten the distance a little by keeping along the bare granitic rocks on the E. side of the lake lying at the top of the pass; but the ground is rough, and he will save no time by that course. The actual summit, 6,769 ft. (?) above the sea, is marked by a massive stone building which, though uninviting, serves as an Inn, and as a refuge in bad weather. Close at hand is a lake called *Lago di Moesola*, but a few feet below the summit level, forming the principal source of the Moesa. The road passes along the W. bank. With the exception of the Stelvio and the Simplon, the scenery of this pass is finer than that of any of the alpine passes traversed by a carriage-road. On leaving the lake, the road traverses the torrent issuing from it, and the descent commences at once. The upper part is very steep, and it is necessary to keep to the road, which is carried diagonally down the rocky slope, commanding a fine view of the *Pizzo di Muccia* (9,721′), and the *Muccia Glacier*, lying between it and a ridge of the Marschollhorn. The zigzags soon commence on the S. side, and the pedestrian may shorten the way very much by a judicious choice of short-cuts. In one place the road is covered over with a strong wooden roof, supported on stone columns to protect it from avalanches. This is close to a fine stone bridge over the Moesa, named after King Victor Emanuel I., who contributed largely to the construction of the road. Pines soon begin to make their appearance, and the scenery becomes softer, though the rugged peaks on either side have a stern aspect. Carriages take 3½ hrs. from Hinterrhein, but pedestrians following the short-cuts do not require more than 2¾ hrs. to reach

San Bernardino (5,334′), a small and poor village, where the stranger is surprised to find several large Inns (H. Brocco; H. Ravizza; H. Motto). The first of these is very good; the second has also very fair accommodation, but the company is less select. The existence of a chalybeate spring, used internally and also for baths, is the main inducement that attracts many visitors, chiefly Italians, to this alpine village during the hot season; but the fine scenery and pure mountain air suffice to make it a desirable stopping-place. Among other excursions Count Luchini Dal Verme recommends the ascent of the *Piz Crave* (9,282′)—wrongly named Pizzo Rotondo in the Federal map. The summit is gained in 3¼ hrs. from S. Bernardino, being approached

from the Col dei Tre Uomini leading to Val Calanca (Rte. C) and to the Val di San Giacomo (§ 33, Rte. D). The botanist will find several interesting species, especially ferns. *Polypodium rhæticum* is common in this district, and the rare *Botrychium matricarioides* has been found in wet meadows not far from the village. S. of San Bernardino the head of the Val Mesocco forms an undulating plateau of considerable width, whereon green meadows alternate with clumps of pine-forest, the whole being enclosed between rugged and picturesque mountains. The stream of the Moesa keeps to the W. side of the plateau, and the high road to the E., ascending very slightly over some of the undulations, until it reaches the verge of the first steep stage in the descent. A torrent falls from the mountains on the E. side of the valley to join the Moesa at the base of the somewhat precipitous slope that separates the upper plateau from the proper head of the *Val Mesocco*, which here opens before the traveller. This valley, also called Val Mesolcina, and in German Misoxerthal, gave its name to a family who played a conspicuous part in the early history of this part of Switzerland. It afterwards passed under the rule of the powerful Milanese family of Trivulzi. The natives, partly by purchase from their feudal lords, partly by the armed aid of their Swiss neighbours, made themselves free, and then united themselves to the Grisons, to which canton also belongs the adjoining Val Calanca. With the exception of the purely Italian canton Tessin, this is the only one of the Swiss cantons that extends to the S. slopes of the Alps.

The high road, after some long zigzags, bears to the l., and crosses the lateral torrent flowing from that side before reaching the lower level of the valley. The foot-passenger may save much time by short-cuts, if he has followed the line of the road. But there is a far more interesting way for the pedestrian, and but little longer, which is found by keeping from San Bernardino along a track near the Moesa, and crossing to the rt. bank before the steep descent from the upper level of the valley. Here, about 1 hr. from San Bernardino, the stream makes an extremely fine waterfall, deserving to be counted amongst the noblest in the Alps. A slight détour is needed to gain a favourable view of the fall. The track is well marked on the W. side of the valley from the waterfall, which is called Alla Spina, to a bridge over the Moesa, at the chapel of San Giacomo (3,760′). Here the stream is contracted between the opposing bases of the mountains, but the gorge opens again immediately; the road crosses to the rt. bank of the Moesa, and another step in the floor of the valley leads by a long descent to

Mesocco, also called Cremeo, a large village with the post station, and two or three very unattractive Inns, frequented by the carters who lead long trains of narrow wagons by this road into Italy. The position of this village is extremely fine. Lying 2,547 ft. above the sea, between the *Pizzo del Quadro* (9,925′) to the E., and the *Cima di Gangella* (9,229′) to the W., the surrounding scenery is quite alpine in character; while the rich foliage of the chestnut, which here becomes the prevailing tree, as well as the aspect of the people and the buildings, inform the traveller that he is here on the threshold of Italy. The ruined castle of Mesocco commands the village, and forms the central object in the beautiful pictures that are presented to the traveller on whichever side he views it. It is a massive pile, with four towers connected by lofty walls, crowning a rock in the middle of the valley. It long passed for the strongest, as it is one of the largest, of the mediæval castles to be found in the valleys of the Alps. The fearful storm of 1834 has left ineffaceable traces of ruin in many places between this and Roveredo; it not only swept away châlets, houses, and bridges, but rolled down huge masses of rock from the surrounding heights, and

covered the once fertile fields with a thick stratum of barren sand and gravel.

The last of the steep steps in the floor of the valley, that characterise this, as well as many others lying amidst crystalline rocks, leads in 2 m. from Mesocco to Soazza (2,067′). The scenery is charming throughout the whole road, and is adorned by numerous cascades formed by torrents from the high mountains on either side, that spring over the precipitous walls of rock enclosing the valley. The finest of these, about 4 m. from Mesocco, is that of *Buffalora*. When seen in the early summer, or soon after heavy rain, it may challenge comparison with any of the same class in the Alps. The torrent issuing from a deep cleft in the mountain above the fall is shot out in a liquid column, gradually spreading like a comet's tail, and swayed to and fro by the breeze. It is worth while to turn aside to the rt. from the road, in order to approach as near the foot of the fall as the spray will permit.

The path to the Val Calanca, by the Passo di Buffalora (Rte. C), follows the course of the torrent above the waterfall. It is best approached from Soazza. Between that village and the Fall of Buffalora the traveller may notice, on the opposite side of the valley, the opening of the ravine of the Foreola, through which lies a path to Chiavenna, noticed in § 33, Rte. E. A very gentle descent of 3 m. leads from the Buffalora fall to *Lostallo*, where there is a fair country Inn, without a sign, at the post-office, seemingly the best between San Bernardino and Roveredo. The vine, fig, and mulberry now announce the climate of Italy. About $3\frac{1}{2}$ m. farther is *Cama*, a very poor village, with the post station. Amidst scenery constantly increasing in richness, the road reaches Grono, close to the junction of the Calancasca torrent with the Moesa. The latter stream, which had hitherto flowed nearly due S from the head of the valley, now bends to the E., and in $3\frac{1}{4}$ m. from Cama reaches

Roveredo (974′), a large, well-built, and thoroughly Italian-looking village, with a ruined castle of the Trivulzi. Here the traveller finds fair accommodation (Inns: Croce Bianca, very fair country inn, civil people; Canone d' Oro). A char may be hired here for Magadino, 10 fr.; or for Locarno, 11 or 12 fr. On the opposite side of the Moesa the picturesque lateral glen called Val Traversagna opens to SW. There is a path that way to Gravedona, on the Lake of Como. Rather more than 1 m. from Roveredo the road passes S. Vittore, the last Grisons village, entering the Canton Tessin before it reaches *Lumino*, where there are extensive quarries. Here the beautiful valley of the Moesa opens out, and is united to the broad Riviera, or lower reach of the Ticino valley, rather more than 2 m. above Bellinzona. The road of the St. Gothard is reached close to the N. end of the fine bridge over the Moesa, mentioned in § 30, Rte. A.

Route B.

HINTERRHEIN TO VAL BLEGNO — ASCENT OF PIZ VALRHEIN.

Although the Vorder Rhein may rightly claim to rank as the main branch of the great river, and at the junction below Reichenau it somewhat exceeds in volume the rival stream that has reached that place through the cleft of the Via Mala, it owes its importance to the large number of torrents that have been poured into it from as many tributary valleys, and the parent stream, descending from the lakes of the Badus (§ 27, Rte. D), can bear no comparison with the ample flow of the main stream of the Hinter Rhein. This issues from the glaciers on the E. side of the main group of the Adula, lying at the head of the Rheinwald valley, which was traced in the last Rte. as far as the point near the

village of Hinterrhein, where the high road leaves the stream to climb the slopes leading to the Bernardino Pass.

In early times, religious feelings, no doubt heightened by the solemn grandeur of the surrounding scenery, attached an especial importance to this, which was deemed the cradle of the great river of Western Europe. Tradition asserts that the Romans erected a temple to the Nymphs somewhere near the outflow of the stream from its parent glacier, and after the introduction of Christianity a chapel stood at or near the same spot. Both temple and chapel have disappeared and left no trace behind; but a bell, said to have belonged to the latter, is shown in the church at Hinterrhein. In modern times this spot has fallen into undeserved neglect, but it will probably become soon a more frequent resort of mountaineers, as the Swiss Alpine Club has opened a comfortable hut at the Zapport Alp, convenient for many expeditions hereafter noticed. The excursion to the source of the Rhine may be connected with an expedition of considerable interest to mountaineers, and of no great difficulty—the ascent of the highest of the Adula Alps. About 6 hrs. going and returning, exclusive of halts, will suffice for a steady walker who is content to reach the so-called Paradies, the usual limit of the excursion; but those who would attain the higher point, where the torrent first breaks out from the Rheinwald Glacier, must add at least 3 hrs. to the day's excursion. The younger Lovetz and J. C. Müller of Hinterrhein have been recommended as guides. Practised mountaineers, with good guides, may traverse either of the new passes, described below, leading to Val Blegno.

After crossing the bridge ½ m. above Hinterrhein, the path turns aside from the road to the Bernardino, and follows the rt. bank of the stream. Floods and avalanches make wild work in this valley, and the path is constantly carried away, so that it is usually necessary to go over much rough ground. As the traveller advances, the scenery becomes more and more wild; the pines dwindle to stunted stumps, and their place is taken by alpine willows and rhododendron, while the mountains on either hand close together, leaving barely space for the stream. The spring avalanches fall so thickly into the ravine, that they form snow-bridges, one or more of which usually remains throughout the year. Crossing the stream by one of these, but with due caution, the traveller continues the ascent along the opposite bank. In about 2 hrs. from the stone bridge near Hinterrhein the channel becomes contracted to a mere gorge, and the path turns away from the stream and begins to climb the steep slope on the l. bank leading to the pastures of the *Zapport Alp*, the highest châlet of the Rheinwald. The view from this point is already extremely fine, but it is far surpassed by that obtained from the spot called *Paradies*, reached in about ½ hr. from the Alp, or 3½ hrs.' steady walking from Hinterrhein. This is a small patch of alpine flowery sward lying in the centre of a vast amphitheatre which includes all the highest summits of the Adula group, whence stream down vast glaciers that seem to converge towards the spot where the spectator stands. There is some confusion as to the names both of the peaks and glaciers. The central and highest peak is Piz Valrhein (11,148′) lying nearly due W. of the Paradies. On the N. side of the amphitheatre is the Guferhorn (11,132′), and opposite to it, on the S. side, the Vogelberg (10,564′). From above the Paradies, a steep ridge of rocks runs up nearly to the peak of the Vogelberg, almost completely dividing the great glacier basin into two separate ice-streams. On the Swiss Federal Map, the name Zapport Glacier has been applied to the entire mass; but this is manifestly inconvenient, and the western glacier descending from Piz Valrhein is known as *Rheinwald Glacier*, while the name *Zapport Glacier* is reserved for the

equally extensive tract lying E. of the dividing ridge. The designation Zapporthorn must be given up, as it has been applied alternately to one or other of the adjoining peaks. Immediately below the Paradies is a savage rift in the rock, forming a deep chasm called *Hölle* (Hell). Beyond this the stream of the Rhine is seen to emerge from the base of the Rheinwald Gl., and this is usually pointed out as the source of the Rhine, or Rheinquelle. Some of the native hunters maintain that the true source is much higher up, at rocks where the stream first breaks out from under the ice of the Rheinwald Glacier, which may be reached in 1½ or 2 hrs. from the Paradies. This is in truth an object of secondary interest. It is clear that the drainage of both the great glaciers that descend this way must ultimately reach the Rhine stream. The main object of the excursion is to enjoy the very grand scenery. One Pass to Zavreila and the Valserthal is noticed in Rte. F. From the expeditions made by Mr. Freshfield, and more lately by Mr. Tuckett, it is clear that a pass from that side to the Rheinwald Gl. is practicable, though rather difficult. See Rte. F.

Ascent of Piz Valrhein (11,148′). This peak, the highest of the Lepontine Alps, was attained in 1789 by Placidus à Spescha. For seventy years no attempt seems to have been made to repeat the ascent. In 1859, that intrepid but somewhat rash mountaineer, M. Weilenmann, reached the summit alone. The next ascent was made in 1861 by M. Coaz, with three companions, and a chamois-hunter named Peter Anton Jellier, of Vals, who is probably a competent guide in this district. The last-named traveller has given an account of the expedition in the *Jahresbericht der Naturforschenden Gesellschaft Graubündens* for the same year. Sleeping at the Zapport Alp, they mounted to the spot above described as Paradies, which is called by M. Coaz Purgatorium. A faint sheep-tract was followed for some distance: they then took to the glacier, but after some time returned to its S. bank. The first stage of the ascent was completed when they gained the col (Lenta Pass) in the ridge between the Piz Valrhein and the Guferhorn. From thence the way lies along the arête. This is very narrow, and, in some places difficult, where steep rocks project through the névé. After overcoming the rocks, the traveller finds the ridge wider, but also much steeper than below, and to reach the highest point it is necessary to wind round the N. side of the peak, so that the final climb is made from the NW. The summit is a ridge about 200 ft. long, running from N. to S., and in one part bare of snow. Here in the two recent ascents were found some remains of the stone man erected there seventy years before by Placidus à Spescha. Including a halt for breakfast, the ascent from the Zapport Alp took 5¾ hrs, and the descent thither from the summit 3 hrs. The panorama is necessarily very extensive, as no peaks of equal height are to be found nearer than the Monte della Disgrazia, the Tödi, and the Galenstock; but the view is especially interesting for the insight which it gives into the orography of the neighbouring Alps. Four valleys appear to radiate from this peak as a centre. To the E. the Rheinwald extends in a straight line to the defile of Rofla. On the N. the Lenta Glacier falls into the head of one of the branches of the Valserthal. To the NW. is the Val Carassina, further noticed below. Finally, on the S. side the peak overlooks the head of Val Malvaglia. On the S. side the mountain is much steeper than elsewhere, and but one small glacier (that of Stabbio) finds a resting-place on that declivity.

The peaks of this group had been neglected by English travellers until 1863, when Mr. Morshead made the first ascent of the Vogelberg. In the following year Mr. Freshfield, with two friends, reached the summit of Piz

Valrhein from the side of the Lenta Glacier (Rte. F), striking the shoulder of the peak high above the lowest point in the ridge connecting it with the Guferhorn. In 1865, Messrs. Moore and H. Walker made a very interesting expedition, in the course of which they effected two new passes, either of which may serve as a communication between the head of the Rheinwald and Val Blegno.

In this work the term 'Pass' is applied only to passages over Alpine ridges that practically serve to connect one inhabited place with another, and not merely to points where it has been found practicable to traverse the crest of a ridge. The so-called 'Bresciana Pass' does not fall within the former definition, and, if used at all, it should rather be approached through Val Soja than by the circuitous way taken through Val Carassina.

The following account is given in the words of Mr. Moore. It must be recollected that both travellers are very active mountaineers, and were accompanied by Jacob Anderegg, a first-rate guide.

'We passed the night of June 23rd at the Bolla Alp in *Val Carassina*, $2\frac{1}{4}$ hrs. from Olivone. Anyone having an idle afternoon at Olivone, is recommended to make an excursion as far as this point, as the scenery is very picturesque, but the path is cruelly steep. The formation of the Val Carassina is very curious. After following a direction from S. to N. for four-fifths of its length, the torrent takes an abrupt turn to the SW., and finds its way to join the Brenno at Olivone, through a ravine which is scarcely visible from below. At the angle, a low grass col communicates to the N. with Val Luzzone and Ghirone, while the extreme head of the valley is only separated by a tract of broken ground from the Val Soja, which joins the Val Blegno at Dangio below Olivone. The valley, in fact, is like a trough open at either end, but with its drainage escaping laterally. From Olivone to the first Alp, of Compieto, is a continuous ascent of more than 3,000 ft., thence to Bolla is a further rise of about 500 ft., above which the valley is almost level. From Bolla we looked over the Col to the N., to the glaciers at the head of Val Camadra, the real outlet of the valley towards Olivone being invisible. Starting at 4.10, A.M., we reached the Bresciana Alp (6,175′), in an hour, and at 5.50 were close to the head of the valley. We then steered for a patch of moraine which was visible high up on the hill side to the E., reached it in 1 hr., and found, as we had expected, that we were on the right lateral moraine of the southern or principal branch of the Bresciana Glacier, from which we got on to the ice in 5 min. without difficulty, some way above its termination. The *Bresciana Glacier*, which is a very fine one, flows in a westerly direction from the very summit of the Rheinwaldhorn. We might have gone straight to the top of that peak, but the snow was in bad order, and therefore. to save labour, we bore away to the left, and struck the ridge above the Lenta Glacier in 2 hrs. from where we took to the ice. Several small difficulties were encountered *en route*, and some step-cutting was occasionally required. The views throughout of the Monte Rosa and Oberland groups were very fine. Turning to the right, we followed the ridge until it merged in the snow-slope forming the northern face of the peak, which feeds both the Lenta and Bresciana Glaciers, passed along the face of this slope to the ridge above the Rheinwald Glacier, and so reached the summit by the old route, at 10.30, in 45 min. from the point where we had struck the ridge above the Lenta Glacier, and $5\frac{3}{4}$ hrs. from the châlets. The pass, which we had thus effected, gives access to either the Lenta Thal, or Hinterrhein, and may conveniently be called 'Bresciana Pass.' Its height is about 10,500′. Instead of descending by the usual route, we went straight down the steep eastern face of the peak, in 45 min., to the

Rheinwald Glacier. This requires caution. Thence, in 30 min., we reached a wide opening in the ridge overlooking the Val Malvaglia, at the point marked on the map 2,938′ or 9,639′, which we propose to call *Vogel Joch*, for want of a better name. It commands a grand view of Monte Rosa and the Oberland. The descent into Val Malvaglia, though presenting no difficulty, is of the most tedious and wearisome character, lying over steep slopes of shale, stones, and débris, varied by smooth bits of rock here and there, which have to be avoided. It took us nearly 2½ hrs. to reach the level of the valley, which we struck opposite to the Bolla Alp on the rt. bank of the stream. We crossed to this Alp (not to be confounded with that of the same name in Val Carassina), but found no one there, although many cows were grazing around. We therefore descended the valley for a short distance, then we crossed the stream, and skirted the slopes on the l. bank, until we fell into a path leading up a large glen, which opens out to ENE. below Bolla. Following this path, which is extremely steep, we reached, in 1½ hr. from Bolla, the unoccupied châlets of Pena, where we passed the night.

'The extreme head of *Val Malvaglia* presents a scene of the greatest desolation, but its central and lower regions appeared to be picturesque.

'Looking up from Pena, it is difficult to see how the head of the glen, in which it is situated, is to be reached, as an amphitheatre of black, shaly precipices, over which stream numberless waterfalls, appears to bar all progress. There is, however, a steep and narrow, but well-marked track, on the N. side of the glen, which leads to an extensive tract of level ground above the cliffs, and on the E. side of this is situated the *Giumello Alp* (6,772′). Starting from Pena at 3 55 A.M., and following this track, which, but for the opportune appearance of a goatherd, we should probably not have discovered, we reached a point opposite the Giumello Alp in 1 hr. From here, a passage might probably be effected at many points over the ridge to the E. into Val Calanca. One such passage is certainly known to the natives, who strongly urged us to take it, in preference to trying to find a route to Hinterrhein, which they maintained to be impracticable. Steering a little E. of N., we ascended the steep grass slopes forming the base of the Vogelberg, which, on this side, is a fine conical rock peak, bare of snow. In 1½ hr. of perfectly easy walking, we took to a small, nearly level glacier, not marked in the map, over which, in 50 min. we reached a Col, which may be called *Zapport Pass*, SE. of the Vogelberg, lying exactly at the head of the Zapport Glacier. The height of the pass must be about 9,600′. The ascent from Pena only occupied 3½ hrs., and nothing could be easier or more agreeable than the route. In descending, we kept to the l. side of the Zapport Glacier, and in 45 min. got on to the promontory which separates it from the Rheinwald Glacier. Below this we lost much time for want of local knowledge, and spent 1½ hr. in getting clear of the glacier to the Zapport Alp, the way being very puzzling. We reached Hinterrhein at 1.25 in 7½ hrs. actual walking from Pena, but the distance might be accomplished in 6½ hrs. Persons taking this pass from Hinterrhein, should bear in mind that in descending it is scarcely possible to keep too much to the right. The track communicating with the lower valley starts from the N. side of the plain on which is the Giumello Alp. The châlets lie out of the direct way, and should be avoided.' [A. W. M.]

Of the two passes leading to Val Malvaglia, the Vogel Joch will be preferred by those wishing to ascend Piz Valrhein, but it is injured by the unpleasant nature of the descent into Val Malvaglia. The Zapport Pass is strongly recommended to mountaineers, being very direct, and interesting on both sides. It may be combined with the ascent of the Vogelberg.

Route C.

SAN BERNARDINO TO ROVEREDO, BY VAL CALANCA.

9 to 10 hrs. walking.

The *Val Calanca* is an unfrequented valley, intermediate between the Val Blegno and Val Mesocco, running due S. from the glaciers of the Marschollhorn to its junction with the last-named valley near Roveredo. Unlike the neighbouring valleys, this leads to no practicable pass across the main chain, and if any exist it must be long and difficult. The consequence is, that very few travellers have turned aside from their route to pay it a visit. It is mainly known through the migratory character of its inhabitants, who apparently fail to find a subsistence in this narrow glen, shut in between high and rugged mountains, and are found scattered over the N. of Italy, where they find employment as glaziers, stonemasons, chimney-sweeps, &c.

The head of the valley, called Alpe di Stabbio, lies between the *Pizzo di Muccia* (9,721′) and *Piz Cravè* (9,282′) to the E., and a glacier-covered ridge culminating in the *Fil Rosso* (10,066′) to the W. From San Bernardino (Rte. A) a path, imperfectly traced, leads over the ridge immediately N. of the Piz Cravè by the *Col dei Tre Uomini* to the head of Val Calanca; and by another much easier pass, called *Col dei Passetti* (6,806′), S. of the same peak, the châlets of Alogna (4,656′) are reached in 3½ hrs About 1 hr. below these châlets is *Val bella* (4,383′), the highest hamlet in the valley, connected with the village of Mesocco (Rte. A) by a pass called *Passo di Tresculmene* (7,064′). Less than 1 hr. lower down is *Rossa* (3,606′), where a path turns off to the W., leading in 4½ hrs. to Malvaglia in Val Blegno, by the *Passo di Giumella* (6,955′). See § 30. Rte. F.

Below Rossa the track, keeping to the rt. bank of the Calancasca, very soon reaches *Augio*, and ½ hr. farther, *Santa Domenica* (3,412′). [Here the track to the *Buffalora Pass* (6,686′) mounts nearly due E. About 4 hrs. suffice to reach Soazza (Rte. A), some distance above the beautiful waterfall of Buffalora. An active walker, starting early from S. Bernardino, might enter the head of Val Calanca at the châlets of Alogna, descend to Santa Domenica, and then return to Val Mesocco by the Buffalora Pass, finding fair quarters for the night at Lostallo.] The direct road down the Val Calanca descends in 3½ hrs. from Santa Domenica to Roveredo, passing *Arvigo*, and crossing to the l. bank at Molina. The lower end of the valley, overlooked by a ruined castle standing near the hamlet of Santa Maria, is very picturesque. The junction with Val Mesocco is at a very beautiful point, less than 1 m. above Roveredo (Rte. A).

Route D.

TRONS TO OLIVONE, BY THE GREINA PASS.

1½ hr. to Surrhein—6 hrs thence to Greina Pass—3¾ hrs descending to Olivone. Path passable for mules.

Having (in Rte. A) described the main line of road that follows the line of valley forming the E. limit of the Adula group, we now proceed to notice the valleys through which the torrents from the N. side of the same range are poured into the northern branch of the Rhine, or Vorder Rhein. The easternmost of these valleys in the *Val Tenji*, called by the German Swiss *Somvixerthal*, because it joins the Vorderrhein valley at *Somvix*, 1 hr. above Trons (§ 27, Rte. C). Though it is a walk of 6 hrs. from the opening to the Greina Pass connecting the head of the valley with the Val Blegno, it contains no village, but only scattered groups of houses, unless we include *Surrhein*, standing at its mouth in the angle between the Somvixer Rhein and the main stream of the Vorder Rhein. The

lower part is very narrow, in many parts a mere ravine, lying between the high range of the Medelser Gebirge to the W., and a nearly equally lofty range to the E., which forms the N. extremity of the Adula range. In this range the *Piz Miezdi* (9,259′) is one of the most conspicuous summits.

This sparsely-peopled glen offers much wild scenery, and the traveller or naturalist who may halt a day or two at the rough but tolerable quarters found at the Tenniger Bad will find ample occupation in exploring its recesses. A general view of this and the Medelserthal may be gained by mounting this valley to the Lavaz Joch (see below), and descending to Dissentis through the Medelserthal—a walk of 9 or 10 hrs. The primæval forest shelters the bear and lynx, and the flora is yet scarcely examined.

The path mounts from Surrhein (reached in 1½ hr. from Trons), above the l. bank of the torrent. The scattered houses on that side with a chapel at 3,076 ft. bear the collective name Vals, while those on the opposite side, connected by a bridge, are called Bubretsch. S. of the latter precipitous faces of grey slate rock fall towards the stream, and make impossible the ascent along the E. side of the valley. Above these rocks are seen the alpine pastures of Nädils, and above them the Piz Nädils, a northern promontory from the ridge of the Piz Miezdi. At the junction of a torrent descending from the W. the valley widens out a little, two chapels and several groups of houses are passed, and the path reaches the

Tenniger Bad (4,177′), lying in a very sheltered position in the hollow of the valley, little more than 1 hr. from Surrhein. The mineral waters contain iron and sulphur, and enjoy some local reputation. The arrangements are of the most primitive kind, and the baths are formed by hollowing out the trunks of large trees. Above the baths the valley is narrowed to a ravine, and the scenery is very wild. In ¾ hr. the traveller reaches the Rhun Alp, and a group of substantial houses, whence it is possible to cross the ridge on the E. side of the valley by the shoulder of the Piz Miezdi, and descends to Tavanassa on the Vorder Rhein (§ 27, Rte. C), by the Val Gronda. Farther S. is the *Cavel Joch*, between the Piz Miezdi and the *Piz Cavel* (9,658′), leading to the Vrinthal (Rte. E) through the Val Cavel. These passes are rough, rarely used, and a guide should be taken. The path up the main valley crosses the stream below the chapel of St. Anthony—whence the Romantsch name Val Tenji is supposed to be derived—and returns by a second bridge (4,396′) to the E. bank. A little higher up is the junction of a considerable torrent, descending from the W. through the *Val Lavaz*, with the main stream. S. of the junction, in the angle between that and the main valley, rises the snowy peak of the *Piz Vial*—Ital. *Gallinario*—10,387 ft. in height, one of the loftiest summits of the Medelser Gebirge, of which group it forms the E. extremity.

[There is a pass to the Medelserthal by the *Lavaz Joch*, which is convenient for those who would see something of that valley and Val Tenji on their way between Ilanz and Dissentis. Before reaching the Rhun Alp, a sheep-track turns to the rt., and mounts steeply to an alpine pasture commanding a view of the Tödi range to the N., and overlooking the deep glen of Lavaz. Beyond this the way lies along the declivity over rough ground, with fine views of the snowy summits of the Medelser Gebirge on the opposite side of the glen. The Lavaz Glacier closes its head, but there is an easy ascent, keeping to the rt., which leads to the *Lavaz Joch* (8,232′), where the traveller gains an unexpectedly fine view of the Medelser Glacier, whose great extent is not so well appreciated from any other point. A steep track leads by the side of the moraine to the Platias Alp. The easiest way from that place is to descend to Curaglia on the mule-track from the Lukmanier Pass to Dissentis,

which is reached in 7 hrs., exclusive of halts, from the Tenniger Bad.]

Above the junction of the Val Lavaz the main valley is often called Val Greina, but this name properly belongs only to the upper valley leading to the Greina Pass. The way here makes a considerable circuit round the E. side of the Piz Vial. The upper end of the Val Tenji lies amid crystalline rocks in which gneiss predominates. Like most highland valleys similarly placed, this forms a succession of plateaux, separated by steep steps of rock down which the torrent falls in foaming cataracts. To the l. is seen the Disrut Pass, leading to the Vrinthal (Rte. E). The traveller who does not wish to cross the main chain may return that way to the Vorderrhein valley. A rather steep ascent to the rt. leads to what appears from below to be the crest of the pass dividing this from the Val Blegno; but when the traveller has reached a height exceeding 7,300 ft. he sees with surprise a nearly level upland glen of considerable extent opening out nearly due W. between the Gallinario Glacier, surmounted by the Piz Vial, to the N., and some of the peaks of the Terri range to the S. Nearly 2 hrs. are required to traverse the wild and lonely *Val Greina*, and a merely trifling ascent leads at length to the summit of the

Greina Pass (7,743′). Being turned at rt. angles to the direction of the main valleys on either side, and shut in by high mountains, the chief of which is the *Cima Camadra* (10,509′), lying W. of the Gallinario, the path commands no distant view. On the W. side a rapid descent leads down to the head of the *Val Camadra*, the main branch of the Val Blegno. This opens out due S., and a tolerably well-marked path lies on the rt. bank of the stream. After a while the traveller may choose between a path on the l. bank passing by *Ghirone* (4,091′), or that keeping by the rt. bank which traverses *Campo* (4,029′). Here two alpine glens descend into the Val Camadra. That which opens on the W. side—called Val di Campo—leads by a pass noticed in § 30, Rte. F, to the Lago Retico, lying in the heart of the Medelser Gebirge. By that way the mountaineer may reach the Medelserthal through the Val Cristallina. On the E. side of the Val Camadra is the opening of the Val Luzzon, remarkable for wild scenery and fine waterfalls. The SE. branch leads to Zavreila (Rte. F) by the Scaradra Pass. Instead of following the ordinary course over the Greina Pass above described, the mountaineer may turn to the S. from the Val Greina about 1 hr. before he reaches the pass, and traverse the low ridge on his l., only 7,415 ft. in height. Descending thence by the Garsura Alp, which lies in the NE. branch of the Val Luzzon, he will reach Olivone in about the same time as by the common rte. For all these passes it is expedient to take a guide. The distances are considerable, and the valleys very unfrequented. Even on the regular track of the Greina a traveller may often walk for 4 hrs. without meeting a human being.

At Campo the change of climate on the Italian side of the Alps is manifest; corn-fields and deciduous trees are found at a greater height than on the opposite side. The path crosses to the l. bank, and about 2 m. lower down reaches *Olivone* (§ 30; Rte. F).

Route E.

ILANZ TO OLIVONE, BY THE VRINTHAL.

	Hrs.' walking	Eng. miles
Villa	2⅘	7
Lumbrein	2⅕	6½
Vrin	1½	3¾
Disrut Pass	2½	6
Greina Pass	2	6
Olivone	3½	9
	14¼	38

As far as Vrin the way is passable for horses, and even for a light char.

Horses cannot go much farther, but a traveller starting from Olivone may ride nearly to the top of the Disrut Pass. There is a fair country Inn at Villa. Those who wish to shorten still more the next day's journey should apply for lodging to the curé at Vrin.

The most considerable of the many tributary streams poured into the Vorder Rhein between its source and its junction with the Hinter Rhein at Reichenau is the *Glenner*, which descends into the main valley close to Ilanz from the *Lugnetzthal*, erroneously written Lungnetzthal in the Swiss Federal Map. This considerable valley is formed by the union, about 5 m. from Ilanz, of two main branches, of which the SW. branch, or Vrinthal, leads to the Val Blegno by the way here described, while the southern branch, or Valserthal, mounts due S. towards the higher peaks of the Adula. Each of the two branches above named is again subdivided into alpine glens that are noticed in the present and the two following Rtes. A traveller arriving from Reichenau may enter the Lugnetzthal by Seewis on its rt. bank (see Rte. F) without passing through Ilanz; but unless he desires to reach without delay the Baths of Peiden, he will gain no time by that course, and will find the path more laborious and less interesting. Ilanz offers good accommodation, and is the best starting-point for the ascent of the Piz Mundaun (§ 27, Rte. C), strongly recommended to travellers in this valley. The course here described is the most direct way from that place to the S. side of the main chain; and though the scenery is not equal to that of the next Rte., it has the recommendation of being much easier of access.

It will make the description of the main portion of the Lugnetzthal more intelligible to state that it appears, during some very long period, to have formed the bed of a lake, in which vast masses of ice-borne materials were deposited, until the basin was nearly or altogether filled up. The main stream of the Glenner and many lateral torrents have cut deeply into the thick alluvial deposit, clearing out wide spaces, but leaving on either side of the valley portions of the plateau which once extended across it at a great height above the present bed of the stream. The Glenner, not content with excavating the softer deposit, has in many places cut a deep trench in the underlying slate rocks, so that the actual course of the stream is seldom visible from the surrounding heights. Besides the way on the rt. bank noticed in the following Rte. and the frequented road passable for light chars described here, the botanist or geologist may follow the l. bank of the stream from Ilanz for some distance; but as this finally enters an impassable gorge, he must be prepared to gain the road above by a rather long and steep scramble.

The regular way into the Lugnetzthal follows for a while the same course that is taken in the ascent of the Piz Mundaun. At the church of St. Martin, instead of continuing to ascend, a rough road is carried nearly at a level along the wooded slope of the mountain. Not long after passing the ruins of Castelberg, the traveller reaches an ancient gateway (3,337′), at a point where the mountain below is almost precipitous, and the rocks above are so steep as to afford no easy passage. This portal is famous in the local annals by the name *Frauenthor*, from the successful stand here made by the women of the valley against an armed body headed by the Count of Montfort, while the men were victoriously engaged against his main force on the heights above. In memory of the day, when the Count and many of his knights became the prisoners of a few armed peasants, the women have preserved, in the village of Pleif, the privilege of sitting on the rt. side of the church, which elsewhere in Switzerland is reserved for the stronger sex. A short way beyond the Frauenthor of Porclas the path passes St. Moritz, and in ½ hr. more, or about 2 hrs. from Ilanz, reaches

Cumbels, rather a large village, 3,837 ft. above the sea, or 1,480 ft. above Ilanz. This stands on the level of the ancient lake terrace, at a great height above the Glenner, commanding an extensive view over the valley and the range of the Signina Stock, dividing this from the Savien valley.

Here those who are bound for the *Baths of Peiden* leave the main track up the valley, and descend by a rough and steep road, just passable for light chars. There is a mineral spring on the W. side of the Glenner, but the sources used for baths and for drinking are on the opposite bank, reached by a wooden bridge. Here in a warm and sheltered position, only 2,690 ft. above the sea, stands the new substantial building, which affords very fair accommodation for 50 or 60 persons. The waters are saline and chalybeate, somewhat similar to those of San Bernardino, but the climate is here far milder. They are considered to be efficacious in cases of disordered digestion, nervous debility, and in some affections of the respiratory organs. The Baths are in an old wooden building, close by the new establishment. Another spring supplies the water used for drinking. A third, much stronger, is little used. The springs were temporarily obstructed, and the house seriously damaged by the inundations of Oct 1868, which did frightful damage. They were not reopened in June 1869.

Returning to the main road at Cumbels, the traveller in ½ hr. farther reaches *Villa* (4,081′), the principal place in the main valley, with a fair country Inn. Near at hand is the church of Pleif, which ranks for importance and antiquity above all those of the neighbourhood. Nearly opposite Villa, but at a much lower level, is Furth (Rom., Uorts), close to the junction of the two main branches of the Glenner, of which that issuing from the Vrinthal is followed in the present Rte. It is remarkable for the dark colour of its water, derived from the friable black slate rocks amidst which it passes. The road from Villa traverses the hamlet of Igels, with some remains of two ancient castles; but there is a shorter path passing Rumein, and meeting the road again at Vigens. On the opposite side of the valley are the considerable remains of *Surkasti* or Oberkastels, a castle with local historical associations, and an adjoining village of the same name. It deserves a visit from those who halt at the Baths of Peiden. After passing Vigens (4,071′), the road reaches *Lumbrein* (4,626′), a large village, near the opening of the *Val Cavel*, through which lies a way to the Val Tenji, noticed in the last Rte. From this place, or from Vrin, several of the adjoining peaks may be easily ascended. The *Piz Cavel* (9,659′) is best approached from the pass (8.320′) leading to Val Tenji by the NW. side, or else from the SE. mounting from Buzatsch. Like all the higher summits of these valleys, it is known by several different names. The *Piz Regina* (9,436′), lying in the angle between the two branches of the Glenner, is also easily accessible from Lumbrein; the view is restricted to the S. by the much higher mass of the Piz Aul. Above Lumbrein the valley is contracted to a gorge, but soon widens out again, and in 1¼ hr. the traveller reaches

Vrin (4,770′), the central point of a number of scattered houses and hamlets belonging to the same commune. Here the curé gives lodging to strangers. The neighbouring peaks offer many interesting ascents and excursions to those who would remain here some days. The village stands close to the point where the Vrin divides into two branches: the western branch leading to the Disrut Pass is the Val Buzatsch; the longer E. branch is called Val Vanescha. The latter wild glen runs up into the heart of a small group of high mountains, often called the *Terri Gebirge*, and it is a ramification of this range that forms the mountain mass which culminates in the *Piz Aul.* SE. of Vrin. Among several other names

for the same peak, it is called Piz Leis in the Valserthal. On that side it rises so precipitously as to be quite inaccessible; but the summit, 10,250 ft. in height, may be reached from Vrin or Lumbrein, through the Val Serenasgia. The shepherd's hut at the head of that glen lies at no great distance from the glacier which leads to the highest point, formed of gneiss. This is a rather considerable expedition, involving a long day's work, and none of the recognised precautions should be omitted in the ascent of the glacier. Equalling or surpassing in height all the neighbouring peaks, the summit commands a very extensive panorama. It immediately overlooks a small lake, lying so high that the ice on it very rarely melts.

[The *Val Vanescha* well deserves a visit. It opens due S. from Vrin, and its head is encompassed by several fine glacier-clad peaks. The highest, *Piz Terri* (10,338′), sometimes called for distinction Terri di Canal, lies SW.; in the centre is the *Piz Scherboda* (10,250′), also called Terri di Derlun; and the SE. peak is called *Frunthorn* (9,954′). On the N. side of the latter peak is a remarkable depression in the range connecting it with Piz Aul, over which the easy pass of the Pettnauer Joch leads to the Valserthal between Vals and Zavreila (see next Rte). The Frunthorn and Scherboda are both accessible from the N. or NW.; but the remarkable pyramidal peak of the Terri is far more difficult of access. The only ascent hitherto recorded was made in the last century by Placidus a Spescha. He started from the hamlet of *Vanescha* (5,873′), ascended westward to the Blengias Alp, and then mounted by the glacier lying on the NW. side of the peak. This was at last attacked from the E. side. Having gained the ridge, he found that he was cut off from the highest point by a deep rift in the rock. The passage of this seems to have been so perilous that the exploit has not since been repeated. It would appear that a fine pass across the main chain might be made from the head of the Val Vanescha, between the Scherboda and the Terri, descending westward towards Val Blegno by the Garsura Alp at the head of the Val Luzzon (Rte. D). This is recommended to mountaineers who may visit this valley.]

The usual object of those who reach Vrin from Ilanz is to pass into Italy by the Val Blegno. The way lies through the branch of the Vrinthal called *Val Buzatsch*. This does not lead directly to the Val Blegno, but only to that high plateau at the head of Val Tenji described in Rte. D under the name Val Greina. After crossing a torrent that descends from the W. to join the Glenner, the path from Vrin ascends gently, due SW., to Buzatsch (5,456′), the last hamlet in this branch of the valley, reached in 1 hr. from Vrin. It is expedient to take a guide for the remainder of the way, until reaching the descent into Val Blegno, as if clouds should come it is almost impossible to preserve the true direction. Above Buzatsch the ascent becomes rather steep, and towards the top it lies over patches of snow and loose slopes of débris, without any trace of path. In 2 hrs. ascending, the summit of the *Disrut Pass* (7,953′) is attained. Though restricted, the view is wild and striking. The traveller must take care not to descend towards the rt., as this would lead him down the Val Tenji, but to keep well to the l. until, after a short but sharp descent, he reaches the plateau leading to the Greina Pass, described in the last Rte.

Fully 8 hrs. should be allowed by a moderate walker for the distance from Vrin to Olivone. In the Swiss Federal Map the name of the pass is written Diesrut, contrary to the usage and pronunciation of the natives of this part of Switzerland.

Route F.

ILANZ TO OLIVONE, BY THE ZAVREILA THAL.

The few strangers who ascend the S. branch of the Lugnetzthal from Ilanz usually follow the way to Hinterrhein described in the next Rte. Very few have explored the more interesting but far more difficult passes leading from Zavreila, either into Val Blegno, or to the glaciers at the head of the Rheinwald valley. As to these, the Editor has obtained but scanty information, and he can give no reliable estimate of distances.

As mentioned in the last Rte., the village of *Furth*, or Uorts, lies at the junction of the two branches of the Glenner, that descend thence through the Lugnetzthal to the Vorder Rhein. Whichever way be taken to reach Furth is circuitous, and involves a considerable ascent and descent. The ordinary course is to mount from Ilanz to Cumbels, and descend thence to the Baths of Peiden, by the road described in the last Rte. A short and pleasant path over meadows then leads in 2¾ hrs. from Ilanz to Furth. The other way is by *Seewis* (2,838′), a village conspicuous from the main road through the valley of the Vorder Rhein, standing on the NW. slope of the Signina Stock, E. of the junction of the Glenner with the Rhine, and commanding a fine view of both valleys. This may be reached from Kästris, by a traveller arriving from Reichenau by the old road on the rt. bank of the Rhine, or directly from Ilanz. A rather steep ascent leads from Seewis to *Riein*, where are seen some remains of two ancient castles. A deep ravine divides this from the next village, and a long détour is needed to accomplish the very short distance that separates it from *Pitasch* (3,481′), a village almost isolated from its neighbours by the profound ravines cut by the torrents into the sides and bottom of the valley. A steep path here descends to the Glenner, crosses it by a wooden bridge, and reaches the Frauenthor (Rte. E) by a no less steep ascent. The circuit would form a pleasant walk from Ilanz. The way to Furth crosses another ravine less difficult than the preceding one, and soon reaches *Duvin* (3,835′), a clean and thriving village, inhabited, like Pitasch, by Protestants. This stands near the verge of the Duviner Tobel, the deepest and most precipitous of the ravines that scar the E. slopes of the Lugnetzthal. A long détour is necessary to reach the hamlet of Camuns (3,855′), whence the traveller descends to *Furth* (2,979′). There is another way from Duvin by what is described as 'a somewhat break-neck path,' down the precipitous face of the mountain leading to the Baths of Peiden, and so to Furth.

At that village the traveller enters the *Valserthal*, one of the most picturesque in this part of the Alps, too rarely visited by strangers. The bridle-path mounts along the rt. bank, the opposite slopes of the valley being covered with pine-forest, extending from hence nearly to Platz. Dark defiles where the track overhangs the roaring torrent, open places with green meadows, scattered hamlets, and picturesque chapels perched upon rocks, form a succession of charming pictures.

The hamlets of Tersnaus and St. Martin, followed by Lungenei and the Chapel of Sta. Anna, are passed in succession. The sparse population speak German, and not, as usual in the neighbouring valleys, Romantsch. Above the chapel of Sta. Anna the grey slates that prevail throughout the valleys S. of the Vorder Rhein give place to green slate, and to white crystalline limestone, that predominate until we reach the gneiss of the central group of the Adula. At the chapel of St. Nicholas a bridge leads the path to the l. bank; another defile follows; and the traveller at last unexpectedly enters a level plain bright with hamlets and scattered châlets, while rye, potatoes, and flax cover the fields. This basin, evidently the filled-up bed of a lake,

bears the collective name Vals, often applied to the chief village at its S. end. It is much exposed to avalanches in winter and spring, but enjoys in summer a comparatively mild and warm climate. Here, just beyond the hamlet of Camps, where the path returns to the rt. bank, is a warm mineral spring, issuing from the rock at a temperature of 79° Fahr., which is in local repute for baths. The arrangements are rude, and the waters have not been studied by competent practitioners. The chief place in the valley is called

St. Peter, also known as Vals am Platz, or simply Platz; it stands at the S. end of the basin, 4,095 ft. above the sea, about 2¾ hrs. from Furth, or 5½ hrs. from Ilanz. There is a tolerable country Inn, which may serve as headquarters to a mountaineer who would explore the very fine scenery of the adjoining valleys. Peter Anton Jellier, who accompanied M. Coaz in the ascent of the Piz Valrhein, would probably be found a competent guide. Close to the village is the junction of the two main torrents that form the Valser-Rhein, as this branch of the Glenner is often called. The S. branch flows through the Peilerthal, by which lies the way to Hinterrhein, described in the next Rte. The longer valley, carrying down a still more considerable stream, is called *Zavreilathal*. At the village of St. Peter, paths from several alpine passes converge. On the slope of the mountain to SW. is the hamlet of Leiss or Fleiss. By that way the traveller may reach Vrin by the *Pettnauer Joch*, noticed in the last Rte., descending thence through the Val Vanescha. There is another more difficult pass from Leiss to Vrin, passing close under the Piz Aul, here called Piz Leiss. In the opposite direction is a pass to Thalkirch, in the Savierthal (Rte. H), the only moderately easy way across the rugged range that separates the two valleys. The way lies at first through the forest, then over pastures, and at last by a zigzag path up steep rocks to the Tomils Alp, whose châlets stand at 7,175 ft., on a sloping plateau commanding a fine view of the peaks of the Adula. A much more extensive view is obtained from the *Weissenstein* (9,675′), lying to the N., or the *Bärenhorn* (9,619′), on the S. side of the pass. Both are easy of access. The pass, which may conveniently be called *Tomils Pass*, is 7,930 ft. in height, and is reached by a faintly-marked track which mounts at first NE., then about due E. from the Tomils Alp. There is an easy descent on the E. side to the highest châlets in the Savierthal. See Rte. H.

The lofty ridge dividing the head waters of the Valser-Rhein extends NW. from the *Fanellahorn* (10,243′), one of the central peaks of the Adula group. The Zavreilathal lies deep between this ridge and that connecting the Piz Scherboda with the Piz Aul. It is a pastoral valley, with many scattered châlets and some hamlets, the chief of which is

Zavreila (5,840′), about 2½ hrs. from St. Peter, standing at the junction of the torrents from the two principal Glaciers on the N. side of the Adula. The mountaineer may find rough but tolerable accommodation here at the house of Ph. Schmidt.

[Immediately to S. opens the *Kanalthal*, a short glen enclosed between snowy peaks, leading to the Kanal Glacier. Waterfalls, formed by torrents from the upper snow-fields, fall down the steep walls of these wild glens. The huts of the Kanal Alp (6,470′) stand in the centre of a grand alpine amphitheatre, and behind them the Kanal Glacier descends from near the summit of the *Guferhorn* (11,132′) in an unbroken stream. That peak, the second in height of the Adula Alps, may probably be ascended from this side. It is certain that the Zapport Alp (Rte. B) may be reached by the *Plattenschlucht* (9,314′), a pass over the ridge E. of the Guferhorn. Though looking extremely steep on the S. side, it is said not to be very difficult; but of course an experienced guide should be

taken for this as well as the other high passes here noticed.]

The passes from Zavreila to the Val Blegno lie through the W. branch of the Zavreilathal, the upper end of which is also called Lentathal. After ascending to W. for about 1 hr. from Zavreila, the valley turns sharply to S., and presents a grand view of the highest peaks of the Adula. The *Lenta Glacier* descends in a very fine ice-fall from the N. side of the Piz Valrhein and the ridge connecting it with the Guferhorn. The lowest point in that ridge appears to be that marked in the Federal map 2,954 m.=9,692 ft. Early in the summer, with plenty of snow, Mr. Tuckett had little difficulty in descending thence by the centre of the Lenta Glacier, but later in the season Mr. Freshfield thought it scarcely possible to reach the *Lenta Pass*, as it may be called, by the ice-fall. But a ridge of rocks leads to a point somewhat N. of the lowest depression, and with good guides the pass should be effected.

After ascending a short way to the S., the traveller who would follow the only certain way from Zavreila to Val Blegno turns aside to the W., and ascends through a little lateral glen which passes on the N. side of a glacier on the slope of the *Plattenberg* (10,253′), and finally attains a depression in the ridge connecting that summit with the *Terri* range. This is the

Scaradra Pass (9,088′), very rarely traversed except by native chamois-hunters, though there are traces of a paved path. The descent on the W. side to Ghirone by the Val Luzzon is long and steep. The difference of level is just 5,000 ft. See Rte. D.

The writer does not habitually call attention to the mistakes in other works that may be considered as rivals to his own. He is bound, however, to warn travellers against one that may lead them into serious difficulties, occurring in a book that contains a larger amount of information than most of those on the Swiss Alps, mingled with no small proportion of error. M. Joanne, in his *Itinéraire de la Suisse*, has described under the name 'Col de Lenta' a pass from Zavreila to Ghirone, passing over the Lenta Glacier. A pass in that direction must nearly coincide with the 'Bresciana Pass' of Mr. Moore (Rte. B), and the descent would lie either through *Val Carassina*, which opens into Val Blegno at Olivone, or through *Val Soja*, opening at Dangio several miles below that village. The *Plattenberg Pass* (9,088′), just equal in height to the Scaradra, is a passage known to the native hunters, leading to Olivone, by the S. side of the Plattenberg, and through Val Carassina. Further information as to these passes is much desired.

Route G.

ILANZ TO HINTERRHEIN BY THE VALSERBERG.

5½ hrs. to St. Peter—5 hrs. thence to Hinterrhein. Path passable for horses.

The traveller who does not desire to attempt the laborious and somewhat difficult route from the Valserthal to the Rheinwald, by Zavreila and the Kanal Glacier, may follow another course through fine scenery, far easier, but less interesting and exciting. By this way a steady walker may easily reach Hinterrhein or Splügen in one day from Ilanz, but an early start is advisable. A guide is not necessary in fine weather.

Having reached *St. Peter* by the course described in last Rte., the traveller follows the S. branch of the valley, or *Peilerthal*. This lies between the range of the *Fanellahorn* (10,243′) to the W. and the *Bärenhorn* (9,619′) to the E. The ordinary track soon leaves the main stream of the Peilerthal, which descends from SSW. and

mounts about due S. through a lateral glen called *Vallatsch*. The highest pastures, deservedly named Schönmatten Alp, lead to the last ascent. The summit of the *Valserberg* is a broad trough-like passage between two low eminences in the range forming the N. barrier of the Rheinwald. The way is marked with poles, so that except in bad weather it is not easy to go astray. Fully 3½ hrs. are required for the ascent from S. Peter to the summit, which is 8,225 ft. in height. Looking backwards there is a fine view to the N. extending to the Tödi chain, while the peaks on the S. side of the Rheinwald are also striking objects. The view on that side is better seen after descending the first and rather steep slope to the highest châlets of Pianetsch (7,120′). The direct way to Hinterrhein is well traced, and that village is reached in 1½ hr. from the top. Another path to the l., passing above a pine forest that clothes a projecting spur of the mountain, and then descending along the base of a line of cliffs, enables the traveller who prefers the good quarters at Splügen to the poor Inn at Hinterrhein (Rte. A) to reach Nufenen on the high road to Splügen, which is thus not more than 2½ hrs. distant in descending from the summit of the pass.

Instead of following the beaten track, there is a more interesting, and not longer, way by the main branch of the Peilerthal, mounting to the Fanella Alp, which lies immediately below the fine Fanella Glacier. At the head of the valley is a pass lying farther east, and a few ft. lower than the Valserberg —8,146 ft. There is no difficulty in descending from the summit to Hinterrhein by the Kirchalp, but it would be prudent to engage a boy to show the way from the highest huts on the one side to those on the other.

Route H.

REICHENAU TO SPLÜGEN, BY SAVIEN AND THE LÖCHLIBERG PASS.

	Hrs.' walking	Eng. miles
Versam	2	6
Neukirch	3	8
Savien Platz	1	3
Thalkirch	2	5
Splügen	4	9
	12	31

Between the valley of the Glenner, whose several branches have been described in the preceding Rtes., and the high road traversing the Via Mala described in Rte. A, descends from S. to N. an unfrequented valley, known in this district for the richness of its pastures and the fine timber of its forests. This is commonly called Savien, but also *Savierthal*. It is rarely traversed by strangers, but if it were more generally known the scenery would certainly attract many visitors. The population is exclusively German and Protestant. To those who have already seen the Via Mala this offers a new way between Reichenau and Splügen abounding in objects of interest, or it may well be taken in a tour of two or three days from Ilanz to Reichenau, sleeping one night at St. Peter in the Valserthal (Rte. F), crossing the pass by the Tomils Alp noticed in that Rte., and then descending the Savierthal to Versam and Reichenau. Versam, standing at the junction of this valley with the Vorderrheinthal, is but 2½ m. farther from Ilanz than from Reichenau, and may be reached from either place by char, so that there is nothing to prevent an active walker from reaching Splügen in one day; but it is a better plan to sleep at Platz, and so gain time on the following day to combine the ascent of the Bärenhorn with the pass of the Löchliberg. A horse may be taken as far as the head of the valley, but it would not be advisable to attempt to take one over the Löchliberg.

Whether starting from Reichenau or Ilanz, the traveller must follow the

old road between those places by the rt. bank of the Rhine, noticed in § 27, Rte C. After crossing the Rhine at Reichenau, the high road to Thusis (Rte. A) is followed as far as Bonaduz. The way there turns to the rt. and follows the base of the mountains at some distance from the Vorder Rhein. After traversing a low col (3,150′) in the hills that extend from the base of the Heinzenberg, the road descends rapidly to a fine bridge thrown across the *Rabiusa* as it issues from the Savierthal into the main valley. This torrent, also called Savier-Rhein, which derives its name from the violence of its current, has cut for itself a remarkable cleft through the slate rocks. Under the name Versamer Tobel this cleft extends a considerable distance into the Savierthal. At the point where it is traversed by the road it is more than 200 ft. deep, and the bridge has nearly the same span. It is worth while to turn aside in order to get a better view of the chasm. On the W. side the road winds up a rather steep ascent in order to reach *Versam*, the village standing at the mouth of the valley, whence diverges the only path by which it can be entered. Refreshment may be had here at a rough country Inn.

Unlike the Lugnetzthal, which, besides dividing into several main branches, receives many smaller torrents through lateral glens, the Savierthal is, especially in its lower part, little but a deep trench between the high mountains on either side. The E. slope is so steep and rocky, that for many miles there is no house nor trace of path on that side. Near the opening of the valley, a torrent issuing from a short lateral glen descending from the Signina Stock joins the Rabiusa some way beyond the hamlet of Acla. It is probable that the forked summit of the *Signina Stock* (9,428′), bearing a small glacier between its two peaks, may be reached that way. At a considerable height above the main path on the rt. is the hamlet of Tenna (5,427′). The traveller who does not intend attempting the ascent from that place must be careful not to follow the path which mounts thither from Acla, or he will have to make a long descent to rejoin the main route farther up the valley. The track from Acla (4,101′) lies along a rocky wooded slope. On the opposite side of the Rabiusa rises a very rugged and steep range, averaging about 7,000 ft. in height. This is the *Heinzenberg*, which on the opposite side inclines very gently towards the Domleschgerthal, feeding on its fertile slopes many herds, and supporting a comparatively large population. After ascending for nearly 3 hrs. through the wild and almost uninhabited ravine of the Versamer Tobel, the traveller reaches a point where the valley opens out, and is enlivened by numerous scattered houses, with fields, and gardens, and bright green pastures. The beauty of the scene is enhanced by the charm of contrast.

The first village is called *Neukirch*, made up of scattered clusters of houses. A steep path here crosses the ridge of the Heinzenberg to Flerden and Thusis. The main track keeps along the l. bank of the Rabiusa, and in 1 hr. more reaches

Savien Platz, the principal village of the valley, 4,255 ft. above the sea. Rough but tolerable quarters are found here at the Post-office. The name Platz is very commonly given in the Grisons valleys to the chief village. In the same valley no other designation is requisite; but inasmuch as there are very many places called by the same name, it is necessary elsewhere to add a second distinctive name. Close to the Church is the junction of the *Carnusa* torrent descending from the W. side of the Piz Beverin. By the steep slope on the rt. bank of the Carnusa, a zigzag path mounts about due E. from Platz to the *Stege Pass* (6,057′) By this very agreeable way Thusis is reached in 4 hrs. The path lies on the N. side and above the gorge of the Nolla (Rte. A). It is worth while for a traveller

visiting the Savien valley to mount high enough on the way to the Stege to get a good view of the Piz Beverin, and of a very fine waterfall near the path. It is a very agreeable walk of 2 hrs. from Platz to

Thalkirch (5,545′), the highest village of Savien, possessing a very ancient church. Here trees become scarce, and alpine pastures cover the slopes. The geologist will notice blocks of a green quartzose schist, mingled with others containing diorite, the origin of which has not yet been ascertained. At 1 hr. above Thalkirch are the châlets of *Costnätsch* (5,909′). The scenery of the head of the valley, encircled by high peaks, is bold and striking. To the E. are the *Bruschghorn* (10,020′), *Gelbhorn* (9,958′), and *Grauhorn* (9,849′); to the S. is a high ridge culminating in the *Löchliberg* (9,990′), rising E. of the pass to Splügen; while to the W. are the Bärenhorn and Weissenstein, with the pass between them leading to St. Peter referred to in Rte. F. Above the last châlets the amphitheatre of rocks closing the head of the valley rises with forbidding steepness, and the appearance of the pass from this side has given rise to an unfounded impression that it is difficult and even dangerous. A small glacier rests on the upper ledges of the dark grey slate that forms the base of the mountain range, and the torrent escaping from it falls over the verge of the precipice in a remarkable waterfall. In early summer, when the torrent is fed by the melting snows, the height of the fall is said to be over 900 feet, and the scene recalls, though on a smaller scale, the famous cirque de Gavarnie. Above the little glacier are seen some singular shattered pinnacles of dolomite. The upper part of the Löchliberg and some of the neighbouring summits are formed of pure limestone and dolomite. The latter is weathered into those singular forms that always attract the attention of travellers. The ascent to the *Löchliberg Pass*, though steep, is not difficult. The track lies just below the rocks whence the waterfall descends, and 1½ hr. suffices to reach the summit (8,169′) from the last châlets. The pass is oftener called Savierberg on the N. side, but is known at Splügen by the name here adopted. There is no difficulty in reaching the E. summit of the *Bärenhorn* (9,232′), and the détour is recommended to those who leave themselves time for the purpose. It is necessary to return thence to the summit of the pass. The way to Splügen (Rte. A) lies at first a little S. of E., finally about SE., through a pretty glen by which the traveller in 1½ hr. reaches that village. In ascending from Splügen, nearly 2½ hrs. may be allowed to reach the summit, and little more than 1½ hr. for the descent to Thalkirch.

SECTION 32.

LOCARNO DISTRICT.

In the three preceding Sections the main chain of the Lepontine Alps between the Simplon and Bernardino Passes has been described. Within those limits the watershed between the Po and the Rhone or Rhine describes a curve convex to the N. A mountain region of considerable extent lies within the space partially enclosed by this part of the main chain. These southern ranges are divided into two masses by a profound depression, the greater part of which is occupied by the Lake Maggiore. To the W. and NW. of the lake is the remarkable group of mountains which are to be described in the present Section. Their limits are clearly defined by the Val Leventina and Val Bedretto to NE., by the valley of the Tessin and Lago Maggiore to SE., by the course of the Tosa between the lake and Domo d'Ossola to SW., and to NW. by the

valley of the same river from Domo nearly to its source in the Val Formazza. The head of that valley is connected with the Val Bedretto by the low Pass of S. Giacomo, described in § 29, Rte. B, which may be held to complete the limitation of the group of mountains here described. These are often called Tessin Alps; but as that term should include the ranges E. of the Val Leventina, while it does not include the southern portion of the group, lying altogether on Italian territory, it has not been adopted here.

Nearly the whole of this district lies within the area marked as crystalline rocks in the geological map, and to the composition of the rocks it owes the peculiar character of its scenery. One singulârity in these mountains that must in the first instance strike the physical geographer, is the fact that very nearly the entire drainage of a district, measuring from 1,000 to 1,200 square miles, is poured down through a number of different valleys so as to converge very nearly in a single point close to the town of Locarno, which is at once the most important in the district, and that which offers the best head-quarters to a stranger visiting it. On these grounds it seems convenient to distinguish the region described in the present Section as the Locarno District.

Few portions of the Alps have been treated by travellers with such complete and undeserved neglect as that here to be described, and the traveller who consults books will find none but the scantiest information. The writer can add somewhat, though not very much, from his personal knowledge; but he will have conferred a benefit on those who love to explore the neglected districts of the Alps by calling their attention to valleys which include much that is beautiful, and some scenes rising to grandeur; although the heights of the mountains do not, with two or three exceptions, exceed 10,000 ft.

It will be convenient to commence the present Section with the description of the remarkable lake that forms its SE. boundary.

Route A.

BELLINZONA TO ARONA, OR SESTO CALENDE, BY THE LAGO MAGGIORE.

Carriage-road to Locarno—12 m.—or to Magadino—9½ m. Steamer on the lake 2 or 3 times each way daily.

From the form of the mountains on either side, and the appearance of the marshy plain extending about 9 m. from the Lago Maggiore to Bellinzona, it is apparent that the lake, at no very distant date, must have approached very near to that town, and that the upper end of the lake-basin has been filled up by the detritus borne down by the Ticino, aided by the Verzasca and some other smaller streams.

Travellers proceeding directly from Bellinzona to the lower part of the lake usually take the post-road by the l. bank of the Ticino to Magadino; but the way by Locarno is more interesting, and that town may well detain the stranger for a day or two. There are post-carriages twice a day between Bellinzona and each of those places. The road to Magadino is for about 5 m. the same that leads over the Monte Cenere to Lugano and Como (§ 33, Rte. C). When that road begins to ascend the slope of the Monte Cenere, the way to Magadino keeps to the rt., traversing the swampy and fever-stricken plain along which the Ticino rolls its turbid waters.

Magadino (Inn: Belvedere, improved, very fair accommodation) seems to be tolerably clear of malarious influence, as it lies on a narrow strip of ground between the foot of the mountains and the lake, and is separated by the broad bed of the Ticino from the marshes that extend beyond the opposite bank. This is the terminus of the lake-steamers which call at Locarno, here full in sight and 3 m. distant, both in coming and going. The passage takes

20 min. Like every other village on the lake, Magadino commands fine views, but it is not a place offering many inducements to strangers.

The road from Bellinzona to Locarno crosses the Ticino by a fine stone bridge, and is then carried along the foot of the *Monte Carasso* (5,649′), that being the name of the mountain rising on the N. side of the valley, and also of a village at its foot traversed by the road. On passing the gorge of the *Sementina*, there is a view of a pretty waterfall. That narrow gorge, the scene of many popular superstitious tales, is sometimes visited by strangers for its wild scenery. Amidst luxuriant vegetation, fine views of the surrounding mountains, and glimpses of the lake, the very beautiful road, after crossing the Verzasca, issuing from a valley of the same name (Rte. B), reaches

Locarno (Inns: Corona, very fair accommodation; Albergo Svizzero, not bad, and very reasonable; Gallo; Aquila). The town lies close to the influx of the *Melezza*, bearing down the united torrents from Val Maggia, Val Osernone, and Val Centovalli. This ample stream, little if at all inferior in volume to the Ticino, has formed an extensive delta, which projects far into the lake, and threatens at some future time to make Locarno inaccessible to the lake-steamers. This low tract of land, adding its influence to that of the not distant marshes of the Ticino, is said to make the neighbourhood unhealthy, but the writer has not heard any instance of strangers being unfavourably affected by the climate.

Locarno divides with Lugano and Bellinzona the rank of Capital of Tessin, but it is a place of much less traffic than those towns. The roof of the principal church, overcharged by the extraordinary quantity of snow that fell here in January, 1863, suddenly gave way at a time when some religious ceremony was proceeding. More than forty lives were lost, and a much larger number seriously injured. The position of the town is extremely beautiful, the neighbourhood affords many agreeable excursions, and is especially interesting to the naturalist. The point most frequently visited is the convent and sanctuary of *La Madonna del Sasso*, standing on a steep rock immediately over the town. The picturesqueness of the site, and the exquisite views which it commands, have made this a favourite resort of artists. On the walls of rock along which the path is carried the botanist may find many rare mosses and *hepaticæ*. Besides these, he will notice *Cistus salvifolius* and other southern species of flowering plants. The view over the lake and the valley of the Melezza is even finer from an old church about ½ m. beyond the convent.

A still more delightful walk, which cannot be too much recommended to the botanist and the lover of scenery, is that to *Ronco d'Ascona*. Rather more than a mile from Locarno is a long stone bridge over the Melezza, partially destroyed some years ago by an inundation of that river, and imperfectly repaired. Following the road towards Ascona for a short distance, the traveller should take a path to the rt. through fields, and then mount the hill-side till he reaches a little dell, traversed by a rivulet that descends from a small boggy plain overgrown by marsh plants. Amongst these are found *Rhynchospora fusca* and *R. alba*, *Carex punctata*, and other rare species. At the farther end of this hollow the path traverses a sort of col between the hills where, beneath some pinnacles of rock, stands a mill called Mulino dei Siseri, and a few steps farther he suddenly gains a most beautiful view over the lake, which lies 650 ft. below. An excellent path is now carried nearly at a level along the steep slope of the mountain, and after a trifling descent leads to the charmingly-situated hamlet of Ronco. On the way, the botanist will observe *Asplenium Halleri* growing in the clefts of rocks formed of quartzose grit. The presence on siliceous rocks of plants usually confined to limestone is a fact

of frequent occurrence in this district. From Ronco the traveller may descend by a steep path to the shore of the lake, and return to Locarno by a new road to *Ascona*, a large village on the S. side of the delta of the Melezza. This road is to be extended beyond the Swiss frontier to Canobbio.

Those who do not intend to visit the Val Maggia should at least go as far as the Ponte Brolla, at the opening of that valley. This is reached in a carriage by a good road passing through charming scenery: 2 hrs. suffice to go and return. See Rte. C.

The traveller bound for the lower end of the Lago Maggiore will take the steamer either at Locarno or Magadino. He will take care to obtain the latest information as to the hours of starting, as changes occur rather frequently. From 5 to 6 hrs. are employed in the voyage to Arona. Some, but not all, of the steamers go on to Sesto Calende, reached in about ¾ hr. from Arona.

The *Lago Maggiore* is about 42 m. long, with a breadth which varies from 2 to 3 m., except at the bay opening westward between Pallanza and Stresa, where this exceeds 6 m. It exceeds all the other Italian lakes in length, but in the extent of surface it falls considerably below the Lake of Garda. Its mean height above the sea level is 646 ft.; but as its depth greatly exceeds that measurement, the bed is almost everywhere considerably below the sea-level, and in one part soundings have reached 2,615 ft. or no less than 1,969 ft. below the sea. Its form is very sinuous, so that there are few points from which any considerable part of its surface can be seen at a single glance. If this lessens the effect of the apparent size, it increases the variety of its scenery, and produces those contrasts for which it is renowned. While the upper end is completely alpine in character, the middle region lies between hills of gentler form, and the lower end advances to the verge of the plain of Lombardy. Opinions are divided as to the rival attractions of this and the Lakes of Como and Garda. The decision must depend on individual taste; but apart from useless comparisons, the charms of this lake will afford abundant enjoyment to the lover of nature. After rounding the flat promontory formed by the detritus of the Melezza, the steamer keeps a SW. course, leaving at some distance to the rt. Ascona and Ronco, both mentioned above. On the steep slopes of the opposite shore some small hamlets are seen, but there is no considerable village. *Brissago*, where the steamers touch, is the last Swiss village on the rt. or NW. shore. It lies at the foot of the highest mountain that rises above the lake. This is the *Mte. Ghiridone* (7,165′), also called *Mte. Limidario*, because it forms the frontier between the Swiss Canton Tessin and the Italian province of Novara. The boundary runs down to the lake, which it touches a little S. of Brissago, and is then carried over the mountains on the opposite or SE. shore. Here the channel of the lake turns due S., and at the same time is narrowed to less than half its previous width. About 4 m. S. of Brissago on the W. shore is

Canobbio (Inn: Bissone, a fair country inn), one of the largest and most thriving villages on the lake, with a church designed by Bramante, and containing frescoes by Gaudenzio Ferrari. It stands at the opening of the Val Canobbina (Rte. I). Near at hand is a large new hydropathic establishment. A gorge called Orrido di Canobbio, not far from the opening of the valley, is said to deserve a visit. Marked differences of climate along the shores of the lake depend upon aspect and the exposure to certain winds. Near Canobbio, with an easterly aspect, and no protection against the N. wind, Alpine plants, such as *Primula viscosa*, *Saxifraga cotyledon* and *S. aizoon*, *Matanthemum bifolium*, &c., come down nearly to the water's edge; while at the next village of *Cannero*, lying on the S. side of a rocky promontory, the olive,

pomegranate, and lemon trees ripen their fruit. In the neighbourhood of this last-named village are several villas, one of which was the retreat of Massimo d'Azeglio, the statesman, writer, and artist, whose name is so intimately connected with the recent history of Italy. Close at hand are two rocky islets which served in the fifteenth century as strongholds of a family of lake pirates and brigands named Mazzarda. Before reaching Cannero the steamer has traversed the narrowest part of the lake, where it little exceeds 1 m. in width. On the E. shore are two villages—Maccagno Superiore and Maccagno Inferiore—lying at the opening of a short glen called *Val Vedasca*. On the same side, about 3 m. farther S., is

Luino (Inns: a large new Hotel—H. Simplon?—Alb. della Beccaccia, tolerable, bears marks of bullets discharged during a skirmish when it was occupied by Garibaldi), a large village with a palazzo of the Crivelli family. One of the most frequented roads from Lugano (§ 33. Rte. G) here reaches the lake, and many passengers usually land and embark at this station. The lake attains its greatest width between Luino and *Oggebbio* on the W. bank. For several miles the course is SW., till, after rounding the base of a conical mountain called *Sasso del Ferro* (3,556′), which must command a noble view, the steamer turns into a little bay in which lies

Laveno (Inns: Posta, good; Alb. del Moro), lying exactly opposite to the large bay between Pallanza and Stresa, wherein lie the Borromean Islands. The views gained from hence over the finest part of the lake are very beautiful, and from many points the peaks of Monte Rosa are seen behind the nearer ranges. There are here some strong forts erected by the Austrians. The neighbourhood is extremely picturesque, and deserves more notice than it commonly receives. There is a road to Lugano through the Val Cuvio, and another equally beautiful to Varese by Gavirate (§ 33, Rte. I). On leaving Laveno the steamer is steered WNW., seemingly quite out of her course, to call at

Intra (Inns: Vitello d'Oro; Leone d'Oro, indifferent and dear), a large manufacturing village, supplied with water-power by the stream issuing from the Val Intragna (Rte. K). It is connected with the high road of the Simplon, by a new line of road passing through

Pallanza (Inns: Grand H. de Pallanza, with a large garden, first-rate; Universo, good, and reasonable; with several others). This ancient town is scarcely a mile from Intra by land, but double that distance by water, being on the opposite side of a rocky promontory that marks the entrance of the bay extending westward to Fariolo. There are several remains here of the Roman period, including some sculpture with an inscription built into the wall of the church of San Stefano. A large new model prison is the most conspicuous building. Close to the town is a large nursery garden, said to be one of the best in Italy. Pallanza is in many ways one of the most agreeable stopping-places on the lake. The Borromean Islands may be visited as well as from Baveno; a boat with two men costs 4 fr. to go and return. To the mountaineer it offers interesting excursions through the Val Intrasca (Rte. K), whose rugged peaks are the boldest in form of those rising near to the lake. There is a good new road traversed by omnibus that passes along the lake shore, and joins the high road from Arona to Domo d'Ossola between Fariolo and Gravellona.

The Borromean Islands, and the places on the W. shore of the lake between Fariolo and Arona, lie without the limits of the present section. They are described in § 21, Rte. A.

The steamers call at Baveno, the Isola Bella, Stresa, Belgirate, and Lesa—sometimes also at Fariolo and at Meina, before reaching

Arona (Inns: Italia; Posta; both

pretty good but not cheap), the chief station for the lake-steamers. The landing-place is close to the railway station. Four trains run daily in little more than 1 hour between Arona and Novara, whence, changing carriages, they may proceed to Alessandria, Genoa, or Turin. The line of railway connecting Arona directly with Milan is now open, and three trains run daily in 2¼ hrs. Since the opening of the rly. the steamers no longer proceed to

Sesto Calende (Inn: Posta, good and reasonable) at the extreme southern end of the lake. At *Gallarate*, where a branch rly. leads to Varese (§ 33, Rte. I), the traveller enters the great plain of Lombardy that extends unbroken to the Apennine and the Adriatic.

Route B.

LOCARNO TO FAIDO, BY VAL VERZASCA.

The *Val Verzasca* is a narrow glen lying between mountains formed of crystalline rock, whose course is pretty nearly parallel to the Valley of the Ticino, with which river its torrent is united at the upper end of the Lago Maggiore, where they enter the lake nearly at the same point. The people of this valley have long borne a bad reputation, probably in some degree exaggerated; but it seems that even at the present day the use of the knife is the too common mode of settling disputes, and cases of homicide, not to say assassination, are far from uncommon. It does not appear, however, that such crimes arise from mean motives; no instances have been cited in which strangers have suffered violence, and there is no reason why the valley should not receive some share of the notice of travellers, by whom it is scarcely ever visited. The opening of the valley is at *Gordola*, about 3 m. from Locarno on the road to Bellinzona. A very steep path, partly cut into the rock, leads along the l. bank through the gorge by which the Verzasca torrent descends towards the Lago Maggiore. Fully 4 hrs. from Locarno are required to reach *Lavertezzo*, the chief village, about 1,800 ft. above the sea. Here the valley is divided into two branches. The N. branch, containing no village, but merely mountain pastures, is formed by the union of three glens, each leading to the ridge dividing Val Verzasca from Val Leventina. By each of these it is practicable to reach that valley; but the ridges to be traversed are high and rough, and there is no well-traced path.

About 1¾ hr. above Lavertezzo, in the main or NW. branch of the valley, is the junction of the *Val d'Osola* with the Upper Val Verzasca. In the fork between the two streams stands *Brione* (2,497′). From that village a path mounts through the Val d'Osola to a pass (nearly 8,000 ft. in height) lying on the S. side of the *Mte. Zucchero* (8,980′), and leading to the Val Lavizzara (Rte. C), into which the track descends nearly 1 hr. above Bignasco. The traveller keeping through the main valley of the Verzasca need not cross that torrent to Brione, but must pass to the rt. bank, ½ hr. higher up. In about 2 hrs. he reaches *Sonogno*, the highest village, 2,982 ft. above the sea. Here the Verzasca is formed by the union of the torrents issuing from two wild and rugged glens. That opening due W. is the *Val Redorda*, leading by the *Passo di Redorda* (7,014′) to Prato, in Val Lavizzara. The pass lies between the Mte. Zucchero and the *Corona di Redorda* (9,214′).

The way from Sonogno to Faido lies through the northernmost of the two glens meeting at that place, called *Val Cribione*. After following the torrent for more than 1 hr., the track mounts by zigzags towards the N., to a pass lying between the Cima Bianca (8,560′) to the E., and a nameless summit (8,704′) to the W. After passing a small lake (5,853′), the track turns to

the rt. and descends about due E. to *Chironico*, on the rt. bank of the Ticino, about 2 hrs. below Faido.

The head of the Val Cabione lies amid some very, very wild mountain scenery. There is a lake, *Lago Barone*, at the unusual height of 8,813 ft.

Information as to this valley and the passes leading to it is much desired.

Route C.

LOCARNO TO AIROLO, BY THE VAL LAVIZZARA.

	Hrs.' walking	Eng. miles
Maggia	2¾	9
Cevio	2¼	7¼
Bignasco . . .	¾	2½
Peccia	2¼	7
Fusio	2	5
Airolo (by Narret) .	7	17
	17	47¾

The greatest of the valleys that converge near to Locarno is the *Val Maggia*. This is one of the deepest valleys of the Southern Alps, and is drained by a stream that, after uniting the torrents from many tributary valleys, soon acquires the proportions of a river. Each of the four branches of the main valley is connected by one or more passes with either of the valleys that enclose the entire group of mountains described in this section—the Val Leventina to the N. and E., or the valley of the Tosa to the W. All the passes noticed in the present and the following Rtes. lead through very fine scenery, and deserve to be drawn from the neglect in which they have been left by alpine tourists. As there is a good road to Bignasco, which has been continued nearly to Peccia, the passes here described to Airolo or Faido might possibly be accomplished in one day from Locarno, by starting very early in a light carriage; but as there are fair Inns at Cevio and Bignasco, it is a much better plan to sleep at either of those places. There is a post-carriage daily from Locarno to Bignasco, starting (in 1863) at 6.30 A. M., and returning from Bignasco at 3 P. M.

The river flowing into the Lago Maggiore near Locarno, formed by the union of the Maggia, the Isorno, and the Melezza, takes its name from the last-named stream, though far less considerable than the Maggia. A good road is carried along the N. side of the valley, at some distance from the Melezza, for about 2½ m., till it reaches the point where the Maggia issues from its parent valley by a strait where it has cut its way through huge whitish masses of gneiss rock. The bridge over which the road to the Val Onsernone crosses the Maggia is called *Ponte Brolla*; it stands only 820 ft. above the sea, or 174 ft. above the Lago Maggiore. This well deserves a visit, and the traveller who comes hither from Locarno should mount for ¼ m. along the l. bank of the stream, which rages furiously in the narrow channel that it has worked for itself in the rock.

The road to Cevio does not cross the Ponte Brolla, but mounts along the E. bank. After about 1 m. the lower reach of the Val Maggia opens out to the NW. The slopes above the l. bank are populous and fertile, while those on the opposite bank are steep and rocky. Between them is a flat space, varying from ½ m. to more than 1 m. in breadth, reduced to a condition of utter barrenness by the inundations of the Maggia, which constantly changes its course, and has covered the bed of the valley with vast masses of gravel brought down from the surrounding mountain ranges. The chief village in this part of the valley is *Maggia* (1,038′), about 9 m. from Locarno. Fine water-

falls abound in all the valleys of this district, and but few can receive special notice. Among the latter must be counted the beautiful fall of *Soladino*, on the rt. side of the valley, opposite *Someo* (1,211′), about half-way between Maggia and Cevio. This produces so fine an effect when seen from the road, at more than ½ m. distance, that it must deserve a nearer visit. This may be effected by crossing the bridge at Cevio. Throughout this valley the traveller will be struck with the many uses to which stone is applied. The gneiss, which is the prevailing rock, is very easily split, and is thus rendered available in many ways. The vines, which are trained in the Italian fashion on trellises, are supported by stone posts from 10 to 12 ft in length.

Close to the junction of the *Rovana* (Rte. E) with the Maggia is *Cevio*, the principal place in Val Maggia, with a fair country Inn. The position is very picturesque. The lower slopes are planted with chestnut, above which are seen larches and pines; while the rugged summits of the surrounding mountains rise in opposite directions, enclosing the rich basin of the valley. The opening of the Val di Campo to the W. is very narrow. On the S. side of the Rovana, near the junction, in a shady spot under steep walls of rock, are a range of wine cellars, with stone seats and tables opposite to them. Such places are commonly resorted to in this canton for drinking-parties, whose too abundant potations usually end in quarrels, not rarely in bloodshed.

A pretty road leads along the rt. bank of the Maggia from Cevio to *Bignasco*. This is a charmingly-situated village, 1,424 ft. above the sea, in the fork of the valley between the main torrent of the Maggia, issuing from Val Lavizzara, and the *Bavona* torrent draining the valley that bears its name (Rte D). There is a large Inn in the middle of the village, tolerably good and dear; but tourists going into Val Bavona (see Rte. D) may find it expedient to stop at a smaller house without a sign, kept by Da Ponte, close to the bridge over the Bavona at the entrance to the village. Here the writer found a tolerable supper, a clean bed, much civility, and extremely moderate charges. The Maggia descends SSW. from Peccia to Bignasco through a very picturesque valley, in some parts narrowed to a defile. There is a good road mounting from Bignasco by the rt. bank, but it was much injured by storms in Sept. 1863, which brought down huge blocks of stone and masses of débris. In one place it was impossible to say whether a bridge had been carried away, or merely buried under a pile of rocks that lay across the road. The ascent is moderately steep, so that little time would be gained by taking a vehicle, and the beautiful scenery is better enjoyed on foot. A fine glen opens on the rt., about 1 hr. above Bignasco, through which lies a path to Val Verzasca (Rte. B). The opening of the *Val di Prato* is on the same side, opposite the hamlet of Broglio (2,388′). This is one of the most considerable of the lateral glens bearing down tributaries to the Maggia. Its head is enclosed by high mountains that support small patches of glacier. The highest of these is called *Pizzo di Campo Tenca*, with three summits, of which the highest attains 10,096 ft. A short way above the opening of V. di Prato is the village of *Prato*, where the road passes to the l. bank of the Maggia. It appears to be a poor place. About 1 m. farther is Sornico, where wine, bread, and cheese may be had at a shop near the road. This is carried on to Peccia, but pending the completion of the new road is little used.

Peccia (2,746′) is an extremely poor village, with a wretched Inn, close to the junction of the Val di Peccia (Rte. D) with the Val Lavizzara. A good new road, made at a large outlay by the communes in the valley, will soon be open to Fusio. In many places the way is opened by blasting. As road makers the Italian peasants far surpass their Swiss neighbours. The way lies

by the l. bank of the main torrent, which falls in rapids and cascades through a ravine far below the path. After 1 hr. the path crosses the torrent, but soon returns to the l. bank, recrossing the stream farther on, in order to reach *Fusio* (4,203′), the picturesque capital of Val Lavizzara, with a very fair inn. [The traveller bound for Val Leventina may here turn out of the valley, and ascend somewhat N. of E. to a nameless pass, 7,625 ft. in height. From thence the easiest course is to keep NE. by the Lago di Tremorgio (5,998′), and descend into Val Leventina, near Dazio Grande (§ 30, Rte. A). The shortest way to Faido is, however, nearly due E. to the summit of a second and lower pass (7,041′), whence there is a practicable descent direct to Faido.]

The *Val Lavizzara* above Fusio is bent first to NW., then about due W.; and this part is sometimes called *Val Sambuco*, from the name of the highest village (4,547′), about 1¼ hr. above Fusio. The shortest way to Airolo is by a path that leaves the valley about ½ hr. above Sambuco, and mounts rather steeply, somewhat E. of N., to a pass 7,697 ft. in height, and then descends to the Val Leventina, along the Calcaccia torrent. On approaching the steep face of the mountain down which that stream rushes towards the fine waterfall that is seen from the high road of the St. Gothard, the path turns to the l. along the slope, passes Nante (4,679′), and descends directly to Airolo (§ 30, Rte. A), which is reached in this way in 5½ hrs. from Fusio. There is another pass, much less difficult to find, on the whole more interesting, but considerably longer, which is reached by a well-marked track carried along the l. bank of the Maggia to the head of Val Lavizzara. It mounts gradually to the *Lago di Narret* (7,349′), the largest of several small lakes lying at the head of the valley. After passing the lake, the track mounts to the *Passo di Narret* (8,013′), lying due W. of the lake. From hence the way lies to the rt. or nearly due N. through an upland glen, containing extensive alpine pastures, called Alpe di Cristallina, by which the traveller descends to Ossasco in Val Bedretto (§ 30, Rte. C), about 1½ hr. above Airolo.

Whichever of the passes here mentioned be chosen, it will be prudent to take a guide from Fusio. In fine weather a mountaineer may find his way alone by the Passo di Narret, but the other passes are scarcely traced, and the mountains of this district frequently present steep faces of gneiss, where nothing but minute local knowledge enables a traveller to pass without difficulty and delay. In point of absolute distance, the Val Peccia, noticed in the next Rte., offers a rather shorter course for reaching the Narret Pass from Bignasco than the way by V. Lavizzara; but the head of that wild valley is so rough and trackless, that the time required would probably be much greater

Route D.

LOCARNO TO AIROLO, BY VAL BAVONA.

Of the numerous tributary valleys that unite to form the Val Maggia, the most interesting to the lover of nature is that called *Val Bavona*, from the torrent of the same name that joins the Maggia at Bignasco. This valley may be taken in the way from Locarno to Airolo, or to the head of the valley of the Tosa (next Rte.). The Val Peccia offers another way to Airolo, but not one much to be recommended. It may, however, be visited by those who desire to return to Bignasco by a new course from the head of Val Bavona, as suggested below.

As mentioned in the last Rte., the village of Bignasco is reached by a good road from Locarno, whence it is distant nearly 19 m. The owner of the small Inn near the bridge has a house at San Carlo, in Val Bavona, containing at least one good bed; and a traveller desiring to explore the upper part of the valley, or to ascend the Basodine, will do well to apply for permission to lodge there. Provisions should be taken from Locarno or from Bignasco. Soon after leaving Bignasco (1,424′), the Val Bavona contracts to a defile between high and rugged granitic mountains, whose lower slopes are clothed with chestnut woods. As the traveller advances by the path, keeping to l. bank, the rocks on either hand approach each other more closely, and the narrow space is filled by masses of fallen rock, amidst whose crevices the chestnut still contrives to find the means of growth. At a point where the blocks fallen from the mountain on the rt. are piled together in the wildest confusion, the following simple inscription on a mass that overhangs the path, records a catastrophe of which no other memorial is preserved: GESU MARIA + 1594 QUI FU BELA CAMPAGNA M.S.F. The way up the valley lies throughout amidst grand and striking scenery. The mountains on either side, formed of crystalline rock, little exceed 8,000 ft. in height; but as the valley is an extremely deep and narrow trench, it may vie in grandeur with many better known and more frequented scenes. The space available for cultivation, or even for pasture, is so limited, that a very small population finds a subsistence here, and nearly all descend in winter to Bignasco, or the adjoining village of Cavergno. After passing a few houses at a place called Ritorto, the traveller comes in view of a very fine waterfall, formed by the torrent issuing from *Val Calneggia*, a glen descending from the range dividing the Val Antigorio from Val Bavona. Just beyond the fall is the hamlet of *Foroglio*, or Furoi, 2,211 ft. above the sea. Here the track crosses to the rt. bank of the Bavona, and the ascent becomes rather more rapid.

At 2½ hrs. from Bignasco is the opening of *Val Antabbia*, a wild glen penetrating the range of the Basodine, immediately S. of that peak, which rises above it in fine terraces of rock. On the opposite or E. side of the main valley, is the highest hamlet, called *San Carlo* (3,150′). This stands about the upper limit of the walnut, the chestnut having disappeared some way lower down. Excepting the use of the house above spoken of, the traveller must not count on the resources of this secluded place, where years pass without a stranger being seen.

Gaudenzio Padovani, who accompanied the writer in an excursion to Val Peccia, would probably be found the best guide to the neighbouring passes, with which he seems to have some practical acquaintance. He has made the ascent of the *Basodine* (10,748′), the highest of the summits enclosing the head of the Val Bavona. This peak has been attained but twice. The second ascent was made in 1863 by an Italian engineer, whose object was to plant a signal available for the survey of the neighbouring valleys. To the S. the mountain rises in tiers of steep precipices; but to the NE. it subsides rather gently in a long slope, covered by a considerable glacier. The ascent does not appear to be difficult for experienced mountaineers. The view is very extensive, reaching to the cathedral of Milan, and to many of the towns in the plain. As the ascent from San Carlo is about 7,600 ft., and would be very laborious with fresh snow, it would be advisable to start very early from that village.

The path leading from San Carlo to the head of Val Bavona crosses to the rt. bank of the torrent a short way above the village, but about ¾ hr. higher up returns to the l. bank at a point where the torrent is contracted between high rocks that almost close the valley. Then commences a rather steep and

long ascent, commanding occasional views of the Basodine. The larches gradually dwindle as the traveller gains the upper level of the valley, where three torrents join to form the Bavona. Keeping to NE. along the l. bank, the traveller in 2½ hrs. from S. Carlo reaches a solitary chalet. It may be well for the reader to know that the local name for a herdsman's or shepherd's hut here, and in several of the Tessin valleys, is *corte*, or *baita*. The way to the Val Bedretto now lies about due N. above the l. bank of a slender stream issuing from the Lago Bianco (6,749′), a small lake lying in a deep hollow. A rather rapid ascent leads to an upper plateau, where lies another larger lake, called *Lago Sciundrau* (7,720′), otherwise Lago Sfondrato. This is said to have no visible outlet—a common occurrence in limestone districts, but very unusual amidst crystalline rocks, and the fact should be verified by examination on the spot. The ascent continues towards the N., till in about 5 hrs. from S. Carlo the traveller reaches a pass (8,475′) in the ridge dividing the basin of the Maggia from that of the Tessin. The descent lies at first to NE., but before long meets the track from the Passo di Narret (Rte. C). The course then lies due N. by the Cristallina Alp to Ossasco in Val Bedretto. Airolo is reached from thence in 1½ hr., or in about 11 hrs. from Bignasco.

[The traveller who, having seen the head of the Val Bavona, would return by a different way to Bignasco, may traverse some scenes of the wildest character by taking a course through the Val Peccia. On reaching the châlet or corte mentioned above that lies 2½ hrs. above San Carlo, he may ascend towards the NW. by the rocky slope of the mountain. There is at first some trace of path, but this is soon lost. The way does not at first appear difficult, but it soon becomes so, and the rocks are so smooth, and give so little hold, that some caution is requisite. After a rather long ascent, which becomes easier as he approaches the top of the ridge, the traveller finds himself at some height above the *Lago Nero* (7,841), a tarn whose gloomy colour deserves its name. Winding along the rough slope above the W. shore, and then ascending a rather steep ridge to the N., he reaches a pass (about 8,700′) connecting the Val Bavona with the extreme head of the Val Peccia. This is a wild, rocky amphitheatre, often in great part filled with snow. To the N. is a peak called *Cristallina* (9,547′), and opposite, on his rt. hand, a lower summit (9,364′), with a small glacier on its N. flank. This savage hollow opens towards the E. Amidst rocks and patches of snow the traveller advances and accomplishes the first step of his descent by an abrupt climb on the rt. bank of the torrent down steep rocks that separate the upper hollow from the filled-up bed of a lake, forming a small plain producing some alpine plants. The best course is to continue the descent by the rt. bank as far as the highest châlet or corte, reached in about 2 hrs. from the pass. Thenceforward there is a pretty good cattle-track, keeping to the rt. bank; but the mountaineer who does not object to rough ground will do better to cross to the l. bank. After a considerable descent, it is necessary to return to the rt. bank by a wooden bridge near a châlet. Here the regular cattle-track begins to mount, and makes a considerable circuit to avoid a ravine through which the torrent rushes down a rapid incline along a channel between smooth rocks. This ravine is passable by a singular track, easily overlooked, and not suited to all travellers. The smooth rock on the rt. bank slopes towards the bed of the torrent at a moderate angle. Sufficient hold for the feet has been provided by chipping notches, two or three inches wide, on the slippery declivity, and here and there by inserting branches of trees into crevices to support stone flags. On these the footing seems rather precarious. At the lower end of the ravine the path rejoins the cattle-track. A

short way farther, another path turns to the l. from the beaten track. This leads down an extraordinarily high and steep step in the valley. There are not many places where a barrier so formidable in appearance is traversed with such ease, in several places by steps cut in the rock. The scenery of the middle and lower part of *Val Peccia* is very fine, and the way is throughout interesting. In ½ hr. from the base of the great descent, the traveller reaches the hamlet of San Carlo (3,304′), not to be confounded with that in Val Bavona. Here he crosses to the l. bank, and follows a very picturesque path along the slope of the mountain. After crossing the Maggia a little way above its junction with the Peccia torrent, the village of Peccia (Rte. C) is reached in 4¾ to 5 hrs. from the Pass of Lago Nero, descending the valley. More than 6 hrs. should be allowed for the ascent. Two hours' steady walking suffice for the descent from Peccia to Bignasco.]

Route E.

LOCARNO TO ANDERMATTEN IN VAL FORMAZZA.

The mountain range dividing the tributaries of the Maggia from the Tosa, and forming the bonndary between Switzerland and Italy, extends from the Passo di S. Giacomo (§ 29, Rte. B) about due S. to the Pizzo Pioda, near Premia. Its chief summits, reckoning from N. to S., are the *Kastelhorn* (10,246′), *Basodine* (10,748′), *Fiorera* (9,584′), *Sonnenhorn* (9,147′), and *Pizzo Pioda* (8.727). S. of the latter the range is less regular in its direction, and subsides into the mass of mountains lying between Domo d'Ossola and the Lago Maggiore. Although the summits attain no great height, the mean elevation is great, there being but one pass below 8,000 ft.

Four or five passes lead from the Val Maggia to Val Formazza. Three of these must be reached through Val Bavona. The northernmost is the *Bocchetta di Val Maggia*, over 9,000 ft. in height, lying on the N. side of the Kastelhorn. From Mr. Freshfield's account it would seem to be a fine and not difficult pass. Time would be lost by attempting it without a local guide as far as the top. The descent is easy, and joins the path of the Pass of S. Giacomo, near the lower lake. Another pass, not indicated on the Swiss Federal Map, leads from San Carlo (Rte. D.) to Fruthwald in Val Formazza through the *Val Antabbia*, by the S. side of the Basodine: 7 hrs. are said to be required for this rte., which must lead through very fine scenery. Fruthwald is 1 hr. above Andermatten (§ 29, Rte. A).

A third way from Val Bavona to Andermatten is by the Val Calneggia. The path mounts from Foroglio, at first SW., then due W., to the *Forcolaccio*, a pass less difficult than the last two, but counted only as a hunter's pass. 5 hrs. from Foroglio—6½ hrs. from Bignasco—are said to be sufficient to reach Andermatten.

The other passes here noticed are reached through the *Val Rovana*, which joins the Val Maggia close to Cevio (Rte. A). After about 1 hr. of rather rapid ascent from Cevio the traveller reaches *Collognasco* (2,641′), where the *Val di Bosco*, opening to NW., joins the main branch of the Val Rovana, called Val di Campo above this point. The path to Val di Bosco traverses *Cerentino* (3,474′), on the slope of the hill E. of the junction, and then descends a little in order to cross to the N. bank of the torrent. A gradual ascent, at last rather steep, leads to *Bosco*, a poor village inhabited by a German population. with an Inn said to be uninviting. There are two ways from Bosco to the Val Formazza, the one lying N., the other S. of the *Marchenspitze* (8,816′). The more frequented is the *Criner Furke* (7,631′), the southernmost of the two, lying about due W. from Bosco. This was traversed

by Saussure, but by few strangers since his time. The path descends on the W. side to the Tosa, at a point about half-way between Foppiano and Andermatten. From 7 to 8 hrs. are required to reach the latter place from Cevio.

Route F.

LOCARNO TO PREMIA, BY VAL ROVANA.

16¾ m. to Cevio—8 hrs. thence to Premia.

As mentioned in the last Rte., the hamlet of Collognasco (2,641′) stands at the meeting of Val di Bosco with Val di Campo. The way to Premia lies through the latter valley. A path mounts from Collognasco, rather steeply, and through fine scenery, along and above the l. bank of the Rovana torrent, to the principal hamlet of Campo, 4,429 ft. above the sea. For the next hour the course is comparatively level, as the path gradually approaches the torrent. The head of Val di Campo is occupied by very extensive mountain pastures, called Alpe di Cravairola. There are numerous passes, all rather high, though not difficult, by which a traveller may reach the Val Antigorio. The most direct way to Premia is by that called *Scatta del Forno* (8,291′). There is a much lower pass lying to SE.; but this leads to Crodo instead of to Premia. Further information is desired.

Route G.

LOCARNO TO DOMO D'OSSOLA, BY VAL ONSERNONE.

The *Val Onsernone* is perhaps less visited by strangers even than the Val Maggia. It is said to be remarkable for the fine timber that clothes its slopes, but the scenery is less alpine in character. It is drained by the *Isorno*, a considerable stream that joins the Melezza about 1¾ hr. W. of Locarno. The road to Cevio (Rte. C) is followed as far as Ponte Brolla, and instead of turning to NW. along the Maggia, crosses that bridge, and is carried along the N. side of the broad valley of the Melezza. The village of *Intragna* stands in the angle between the Melezza and Isorno, above their junction; but the road into Val Onsernone keeps to the l. bank of the latter stream, and is practicable for chars as far as *Berzona* (2,638′), about 11 m. from Locarno. This village lies a little below the point where the two upper branches of the valley unite. Both are known by the name Val Onsernone. The NW. branch, lying altogether in Swiss territory, contains but the single small village of *Vergeletto* (2,989′). There is a path from thence to Cevio, probably interesting, passing by the E. side of the *Cramalina* (7,520′), and the *Pizzo d'Alzasca* (7,418′). The head of the valley, extending 6 m. W. of Vergeletto, has extensive pastures on its N. slopes. It is closed to the W. by the steep ridge of the *Pizzo di Madaro* (8,366′). A pass, 6,444 ft. in height, leads from the last châlets to the upper part of the Val di Campo (Rte. F).

The S. branch of Val Onsernone, far more populous than the other, opens due W. from the hamlet of Russo, lying in the fork between the two branches of the main valley. The bridle-track is carried along the l. bank, and after passing *Comologno* (3,504′), in about 1½ hr. from Russo reaches the *Baths of Craveggia*, where there is a mineral spring somewhat frequented by the natives of this district. The

establishment is said to be on a humble scale. It lies low (3,320′) on the rt. bank of the torrent, between steep wooded slopes. S. of the Pizzo di Madaro the frontier between Switzerland and Italy does not follow the watershed, but cuts across the valleys drained by the tributaries of the Melezza. The Baths of Craveggia are close to the boundary line, but lie on the Italian side. There are several practicable passes leading westward from the head of Val Onsernone, the best known of which is the *Passo della Forcola*. They all lead into a valley drained by a stream (having the same name—Isorno—as that of the Val Onsernone) which joins the Tosa nearly at the same point as the Diveria, just below the bridge of Crevola. Fully 6 hrs. should be allowed for this way from the Baths to Domo d'Ossola.

A rather easier way, though involving a slight détour, is to cross the ridge S. of the Baths of Craveggia. A well-marked path leads that way to the village of Craveggia in Val Vigezzo (see next Rte), and there is a good road thence to Domo.

Route H.

LOCARNO TO DOMO D'OSSOLA, BY VAL VIGEZZO.

	Hrs.' walking	Eng. miles
Intragna . . .	1¾	5¼
Olgia	2	6
Sta. Maria Maggiore .	2½	7½
Domo d'Ossola . .	3¼	10½
	9¾	29¼

This road is practicable for chars, and may be recommended to those going from Domo d'Ossola to Locarno who have already seen the Lago Maggiore. The scenery, especially for those approaching Locarno by the Val Centovalli, is very rich and beautiful. The road being very hilly, a char will take from 6 to 7 hrs., exclusive of halts. In the last Rte. several instances were noticed in which confusion is created by the unsystematic nomenclature of places in this district, either by the same name being applied to two different places, streams or valleys, or from two names being given where a single one only is required. Several other instances must here be pointed out, in order that the traveller may avoid inconvenient mistakes.

The valley of the Tosa near Domo d'Ossola is connected with Locarno and the head of the Lago Maggiore by two valleys which, instead of being divided by a mountain ridge, diverge from a nearly level plateau. The same name, *Melezza*, is given to the stream, mentioned in the preceding Rtes., that joins the Isorno and the Maggia near Locarno, and to that which descends in the opposite direction to the Tosa near Domo. The lower part of the valley of the eastern Melezza, extending about 11 m. from Locarno, belongs to the Canton Tessin, and this is named *Val Centovalli*; while the upper, or Italian, portion of the same valley is called *Val Vigezzo*, which name is also given to the entire valley of the western Melezza descending to Domo.

The village of *Intragna*, beautifully situated above the junction of the Isorno with the Melezza, is reached in about 1¾ hr. from Locarno, by the road along the N. bank and the Ponte Brolla, or by a rather longer road on the S. bank of the Melezza. The char-road is carried from Intragna along the N. slopes of the Val Centovalli by *Verdasio* (2,316′) to Camedo, the last Swiss village. The pedestrian may take a rather longer but more shady path along the S. side of the valley. The scenery is very picturesque. Many rugged buttresses of rock project on either side, and the scenery offers a succession of new and beautiful pictures. From this peculiarity the name Centovalli is supposed to be derived. The first Italian village is *Olgia*, about ¼ hr. beyond the frontier. At *Folsogno*,

¾ m. farther, the traveller may choose between the road on the l. bank by the village of *Craveggia* (not to be confounded with the Baths of Craveggia in Val Onsernone, see last Rte.), or one on the rt. bank by *Malesco*. Either way leads, in about 2½ hrs., from Olgia to

Sta. Maria Maggiore (2,710′), the chief place of the united valleys bearing the common name Val Vigezzo, at the E. end of the plateau whence they both diverge. Here the chief branch of the eastern Melezza descends from the *Pioda di Crana* (7,959′). A mountain track passing E. of that summit leads to the head of Val Onsernone. There are several country Inns (best is Leone d'Or) at Sta. Maria Maggiore, and the valley descending to Domo contains many large and comfortable houses belonging to natives, who return hither after making fortunes elsewhere. This is a good station for a botanist, who may find the rare *Potentilla grammopetala*, and many other interesting plants, on the rugged ridge dividing the affluents of the Melezza from the head of Val Intrasca (Rte. K).

At the W. end of the plateau, about 2 m. from Sta. Maria, is *Druogno*. Here the road begins to descend along the western Melezza, first by the rt. bank, afterwards on the opposite side. The scenery is very pleasing, and the whole drive full of interest.

Route I.

CANOBBIO TO DOMO D'OSSOLA, BY VAL CANOBBINA.

Bridle-track to Sta. Maria Maggiore, 6 hrs.—thence by road to Domo, 3½ hrs.

The course here suggested offers a variation on that pointed out in the last Rte., and is said to pass through equally fine scenery. As mentioned in Rte. A, a considerable valley opens westward, close to Canobbio, on the W. shore of the Lago Maggiore. A cart-track has been carried along the *Val Canobbina* for some miles from Canobbio. At first it lies along the rt. bank, but soon crosses the torrent to *Traffiume*, returning before long to the S. bank, but recrossing to the l. bank, and coming to an end at a point nearly 2 hrs. from Canobbio. Probably the best course for a pedestrian is to follow the old track on the l. bank from Traffiume to *Cavaglio*, and thence to *Orasso* and *Cursolo* (2,910′). Between the point where the road comes to an end and Cursolo, the valley makes a great bend, and it is about equally short to follow a path by Falmenta and Gurro that returns to the rt. bank, and then crossing the Canobbina, rejoins the main track at Cursolo. Another bend of the valley leads thence to Finero, the highest village in the valley. Here the principal branch of the Canobbina torrent descends from the SSW., where it rises on the W. side of the Cima di Laurasca (Rte. K), the highest of the summits enclosing the head of Val Intrasca. The path traverses a very low pass leading from Finero to Malesco, on the S. bank of the Melezza, about 1 hr. from Sta. Maria Maggiore See last Rte.

Route K.

PALLANZA, OR INTRA, TO DOMO D'OSSOLA, BY VAL INTRASCA.

A considerable stream, called Rio di San Bernardino, is poured into the Maggiore between Pallanza and Intra (Rte. A). This issues from *Val Intrasca*, a long valley penetrating

deeply into the rugged mass of mountains so conspicuous in most of the views near Stresa or Baveno. It has been visited by botanists, who have been rewarded by many rare plants, but remains utterly neglected by other travellers. It offers to the mountaineer a way from Domo d'Ossola to the shores of the Lago Maggiore, which must offer some fine scenery, and from some points a view of the peaks of Monte Rosa. About 7 m. from Pallanza, or Intra, the valley forks. The shorter E. branch originates in a very fine ridge of granite or gneiss between the *Cima di Laurasca* (7,264′) and the *Monte Zeda* (7,064′), the two highest summits of the range S. of Val Vigezzo. The longer branch of Val Intrasca, called Val Grande, descends on the W. side of the Cima di Laurasca. From the N. end two paths lead to Val Vigezzo. The one mounting NE. leads to Sta. Maria Maggiore; the other traverses the *Col della Colonna*, between the Testa di Menta and Monte Tofano, and descends to Trontano, near Domo d'Ossola, just at the opening of Val Vigezzo.

[A stream, called Rio di San Giovanni, flows into the Lago Maggiore at Intra, parallel to that issuing from Val Intrasca. The former drains the *Val Intragna*, a short valley originating on the E. side of Monte Zeda. Between that summit and the *Monte Spalavera* (6,822′) a path crosses the ridge dividing this from the Val Canobbina, and descends to Finero (Rte. I); and by that way a traveller may reach Sta. Maria Maggiore. Another path turns to the E. from the head of the valley, passes along the S. slopes of the Monte Spalavera, and descends to Cannero (Rte. A). This would be a short and probably a very agreeable walk from Intra. The hamlet of *Intragna* (2,443′), not to be confounded with the larger village of that name W. of Locarno, is the principal place in this valley. It is reached in 2½ hrs. from Intra, and has a rough but tolerable *osteria* kept by Minesi. From hence the *Pizzo Marrone* (nearly 7,000′) may be reached in 3½ hrs. It is the conical peak, conspicuous from Baveno and the S. part of the Lago Maggiore, crowning a ridge projecting S. from Monte Zeda, which slightly surpasses it in height. The view from the Pizzo Marrone is fine and interesting. A small oratory stands about 30 ft. below the summit.

Further information as to these valleys is desired.

SECTION 33.

COMO DISTRICT.

In Sections 29, 30, and 31 of this work, the portion of the main chain of the Alps, usually included under the designation Lepontine Alps, has been described. It was seen that this common name comprehends mountain masses whose orographic relations are very indistinct, and that the term *main chain* does not imply the existence of a definite axis of elevation, throwing the streams on the one hand to the basin of the Rhine, on the other to that of the Po, but merely the fact, that amidst the contiguous mountain groups the line of demarcation, or watershed, actually exists. To the E. of the Bernardino Pass, which marks the limit of the Adula group described in § 31, a ridge whose predominant direction is from N. to S. extends from the Rheinwald valley, and by its southern ramifications fills the space between the Lago Maggiore and the Lake of Como. Besides the fact that the direction of this range has an evident relation to that of the Adula, while it has little in common with that of the principal masses of the Rhætian Alps described in the next chapter, the pass of the Splügen and the valley of San Giacomo form the natural prolongation of the cleft through which the Rhine descends from the village of

Splügen to Coire. For these reasons it seems clear that the range now in question may most properly be united to the Lepontine Alps.

The portion of this range included in the so-called *main chain* is scarcely 8 m. in length, extending from the Bernardino to the Splügen Pass, but it includes the considerable peak of the Tambohorn (10,748′). From that summit a lofty ridge extends due S. for more than 20 m. to the Pizzo d'Agnone (8,513′). Beyond that limit the range throws out numerous branches, and the direction of the lateral valleys becomes irregular, as may be seen in a marked manner in the strange form of the deep depression occupied by the Lake of Lugano. The eastern limit of this group is marked by the valley of San Giacomo, by the course of the Mera, and by the Lake of Como. It will be most convenient to include in this Section the isolated group of mountains lying between the two branches of the lake, as well as the description of the road along the E. shore from Colico to Lecco.

The attractions of the southern portions of this district are widely known. As additional facilities have made it more and more easy to reach the S. side of the Alps, the number of tourists whose main object is to see the Lakes of Como and Lugano has constantly increased. It may be surmised that the large number whose acquaintance with these lakes is nearly confined to what they can see from the deck of a steamer, can but form a very inadequate idea of a region whose attractions are not exhausted to those who have devoted months, and even years, to its exploration. The hotels on the Lake of Como are not quite equal to the best in Switzerland, but they now offer excellent accommodation. There is also at least one good hotel at Lugano, which is often resorted to as headquarters. Fair country Inns are found at many other places in this district occasionally resorted to by strangers and the new hotel on the Monte Generoso supplies the want much felt by English travellers, of cool mountain air during the hot season.

Route A.

COIRE TO COMO, BY THE SPLÜGEN PASS

	Leagues	Eng. miles
Thusis	5½	16⅓
Splügen	5¾	17¼
Campo Dolcino	5½	16⅓
Chiavenna	2¼	7½
Colico	5¾	17¼
Bellaggio (by steamer)	4½	13½
Como	5½	16½
	35	105

In posting, 10⅛ posts (equal to 92 m.) are charged from Coire to Colico. The course actually taken by the lake-steamer in calling at the villages on either shore greatly exceeds the distances above given.

The road of the Splügen was constructed at the cost of the Austrian Government by the engineer Carlo Donegani, nearly at the same time that the Swiss opened the first carriage-road between Italy and Switzerland over the Bernardino Pass. The N. side of the pass, involving an ascent of little more than 2,000 ft. from the village of Splügen, presented no unusual difficulty; but the descent on the Italian side cost a vast amount of labour and money, and is, with the exception of the Stelvio, the most difficult road that has yet been constructed in the Alps. It was not so much the difference of height to be surmounted, though this is nearly 6,000 ft. in a distance of 13 m., as the difficulty of protecting the road from destructive avalanches, that taxed the skill of the engineer, and ultimately led to the construction of a new line to replace the original road in the most difficult part of the Rte.

The road from Coire to *Splügen* (4.757′) is described in § 31, Rte. A. Here the road to the Lake of Como separates from that of the Bernardino leading to the Lago Maggiore, crosses the

Hinter Rhein, and at once commences the ascent. The original road was almost completely destroyed by the terrific storm of 1834, and the present line is carried at a somewhat higher level, seemingly out of the reach of floods and avalanches. The view of the Rheinwald valley is lost after the road passes through a short tunnel, and the road enters an alpine glen leading towards the pass. Long lines of light waggons are commonly met on the way, as this road, being the shortest from Lombardy to the Lake of Constance, is an important channel for commercial intercourse. The last part of the ascent, which lies above the limit of the pine, is accomplished by sixteen long zigzags. Near the summit on the Swiss side, *Primula longiflora*, *Sesleria disticha*, and other uncommon plants, may be found.

The crest of the pass, 2 hrs. from Splügen by the road, but less to a pedestrian, is marked by a cross with a notice of its height above the sea-level—6,945 ft. It marks the frontier between Switzerland and Italy. Looking back, the traveller sees the Piz Beverin, and some of the other peaks W. of the Rhine valley. In the opposite direction the highest summit visible is the *Piz d'Emet* (10,502′). The Tambohorn (10,748′) lies about 2 m. W. of the pass, but is not in sight. It is said that the summit may be reached from hence, but the only ascents of which the Editor has heard have been made from the Areuethal (§ 31, Rte. A).

The road winds a little to the rt., and in a few minutes reaches the highest *Cantoniera*. This is a large stone house intended to serve as a lodging for the men employed on the road, and in bad weather as a refuge for travellers. At such times, a bell is rung to point out the way amidst the deep snow that covers the pass for many months in the year. About 1 m. from the summit the traveller reaches a group of buildings, the largest of which is the Italian Custom-house, with an uninviting Inn beside it. These lie in a nearly level dreary hollow, where snow sometimes lies 10 ft. deep in the winter and spring. To the west is seen a portion of the *Curciusa Glacier*, lying on the ridge connecting the Tambohorn with the *Pizzo Terre* (10,165′). Beyond the Custom-house the road crosses the head waters of the Lira, which gives its name to the stream that accompanies the road to Chiavenna. The original path across this pass descended along the torrent into the deep gorge of Cardinel, as the head of the Val di San Giacomo is called.

'The French army of Marshal Macdonald, who crossed the Splügen between the 27th November and 4th December, 1800, long before the new road was begun, in the face of snow and storm, and other almost insurmountable obstacles, lost nearly 100 men, and as many horses, chiefly in the passage of the Cardinel. His columns were literally cut through by the falling avalanches, and man and beast swept over to certain annihilation in the abyss below. The carriage-road very properly avoids the gorge of the Cardinel altogether, but the way to it turns off from the second wooden bridge crossed on quitting the Custom-house.'—[M.]

After passing the third Cantoniera, and some scattered houses, the difficult part of the descent commences on the l., or E. slope of the valley, at a very great height above the torrent of the Lira, which is not yet visible. The slope being very much exposed to avalanches, it has been necessary to protect the road by massive galleries, of masonry, strong enough to allow the avalanches to pass over them without doing injury. Three such galleries of unusual length, 755, 699, and 1,673 ft., are passed in succession. Near the small village of *Pianazzo* there is a striking view over the valley of the Lira, lying far below the spectator, and of the village of Isola, whence there is a path to San Bernardino, noticed in Rte. D. The road originally descended from hence to Isola by a

very long series of zigzags; but the damage done by avalanches and the storm of 1834 led to the abandonment of that line, and the construction of a new road. This, after passing Pianazzo, crosses the torrent descending from the Madesimo Pass a few paces from the point where it springs over the edge of the precipice into the valley of San Giacomo. A solid stage with a balustrade has been constructed at the very edge of the rock beside the waterfall. This is not in itself remarkable, the volume of water being small, but the view is very striking, and no one should pass without turning aside to enjoy it. Immediately beyond the waterfall, the road enters a tunnel, and on emerging from it commences a descent which is probably the steepest which has ever been made passable for wheeled vehicles. On reaching the level of the valley, there is about 1½ m. of moderate slope leading to

Campo Dolcino (3,553′), a small and poor village, with a pretty good Inn at the post station. The village is close to the junction with the Lira of the *Rabbiosa* torrent, descending from the Pizzo Groppera (9,625′). The *Val di San Giacomo* is, throughout its length, wild and rugged, and this effect is heightened by the masses of débris and larger blocks that cover the slopes and the narrow space in the floor of the valley. A little below Campo Dolcino the chestnut begins to appear, and as the traveller descends to Chiavenna this beautiful tree partially covers and corrects the sternness of the rock scenery. The numerous *campanili* that come into view as the traveller descends the valley, give an Italian aspect to scenes that are highly picturesque, but have not much else that is characteristic of the South. The road descends constantly, but not very steeply, throughout the way to

Chiavenna (Inns: H. Conradi, at the post station, best; Chiave d'Oro, cheaper; at both the people are tricky). This ancient town stands 1,040 ft. above the sea, near the junction of the Lira, descending from the Val di S. Giacomo, with the Mera, issuing from Val Bregaglia (§ 36). The position is very picturesque. Rugged peaks of crystalline rock rise in every direction above the nearer slopes, which are clothed with chestnut woods; and fine masses of rock project here and there from the lower level of the adjacent valleys. It lies too low, however, and the near mountains are too steep and high, to make it a desirable stopping-place for a mountaineer. There is an ancient castle, once belonging to the Salis family, which is visited by strangers for the sake of its garden, and for the fine view gained from the top of the rock. The church of San Lorenzo contains some curious fragments of antiquity. Being the place at which one of the main roads to the Engadine joins the Splügen road, there is considerable traffic here, and frequent passage of tourists during the summer and autumn.

The road from Chiavenna to the Lake of Como commands some fine views of the adjoining mountains, but the valley is often defaced by the masses of gravel brought down by the Mera. Above the rt. bank of that stream there is a waterfall near the village of Gordona, sometimes visited from Chiavenna. The road keeps to the l. bank, passing under the steep spurs of the *Pizzo di Prata* (8,663′), which is visible from some points on the road. About half-way to Colico is the post station of Riva, standing at the N. end of the *Lago di Mezzola*. This originally formed the N. end of the Lake of Como; but the prodigious mass of detritus brought down by the Adda has filled up and barred across the portion of the original lake-basin lying opposite the opening of the Val Tellina. After passing the opening of the *Val Codera*, a very wild glen enclosed between pinnacles of crystalline rock, the road is carried along the E. shore of the L. di Mezzola, then crosses the Adda by a new stone bridge, and traverses the low marshy tract that

covers the space gained by the Adda from the lake: see § 36, Rte. E. Passing near the Fort of Fuentes, erected by the Spaniards to command the entrance to the Val Tellina, the traveller reaches the shore of the L. of Como at

Colico (Inns: Albergo del Lago; Isola Bella; both indifferent, dirty, and dear). This village, as well as all those on the borders of the marshy delta of the Adda, long held a reputation for unhealthiness, and pernicious fevers were said to be common amongst the native population. Drainage-works recently executed are said to have removed or diminished the evil; but a traveller will do well to avoid sleeping here—and, in truth, there is little temptation to do so.

This is the terminus for the lake-steamers. Of the three departures, two only take place by day, as one steamer starts, or did recently start, at 2.30 A. M., for the convenience of travellers arriving from Coire by diligence.

The traveller bound for Como, who would not make a long détour by Lecco, or follow a still more laborious route on foot or on horseback along the W. shore of the lake, must avail himself of the steamer. The chief places on the way from Colico to Lecco are noticed in Rte. B; those on the W. shore are mentioned below.

The Lake of Como fills a remarkable depression or cleft which has not only cut through the limestone mountains that enclose the greater part of its course, but also the zone of crystalline rocks that extends from the N. end of the Lago Maggiore to the Legnone immediately S. of Colico. The form of the lake is very peculiar, being that of a Y reversed. Of the two southern arms or legs, the E. branch extending to Lecco is the true outlet, while the W. branch leading to Como is an enclosed bay. During the glacial period, when a great glacier filled each arm of the lake, the ice rose high enough to overflow the comparatively low barrier S. of the town of Como, and the flanks of the hill near Camerlata still bear evidence of the passage of some portion of the glacier in that direction. Measured along the mid-channel, the length of the lake from Gera, N. of Colico, is about 37 m.; and this is about the same whether it be measured by the W. arm to Como, or by the E. arm to Lecco. In most places the breadth varies from 1 to 2 m.; but in the broadest part, between Menaggio and Varenna, it reaches $2\frac{1}{2}$ m. The height of the lake above the sea-level is 699 ft., and the depth, which is everywhere considerable, in some places reaches 1,926 ft.

A writer well acquainted with the charms of this far-famed lake risks falling into hyperbole, while it must be owned that those who see it for the first time sometimes experience a sensation akin to disappointment. The great height of the adjoining mountains is not at first fully apprehended; and their effect is to dwarf its apparent dimensions, and give to it something of the character of a river. But if it be true that the sheet of water lying between the opposing heights is in some degree intermediate between a great river and a narrow lake, it may challenge comparison, for the beauty and grandeur of its scenery, with any other river or lake. The lesser mountains along the lake-shore seldom rise to less than 5,000 ft. above the level of the water, while the greater peaks, such as the Legnone, Grigna, and Campione, attain a relative height of from 7,000 to 8,000 ft. These proportions, which are matched by but two or three of the smaller alpine lakes, are here combined with wondrous variety of form, presenting contrasts that can scarcely be equalled elsewhere, and with a luxuriance of Southern vegetation that has no rival, except on the other two great lakes of the Italian Alps. This holds on the S. side of the Alps the same place that belongs to the Lake of Lucerne among those of Switzerland, and according to the taste of each traveller he may prefer the one or the other, unless, like the present writer, he should divide the

palm between them. Here the stranger finds not only the richer vegetation of the South, but also the outward form of Italian life. Massive houses of substantial masonry replace the wooden galleries and spreading roofs of the Swiss rural dwellings, while villas, some of them approaching the scale of palaces, are crowded together on many parts of the lake-shore. The bright green meadows, so characteristic of the mountain slopes surrounding most of the Swiss lakes, here give place to the varied shades of grey and brown that are blended with the green in the mountain pictures of the South. The climate is very perceptibly hotter than on the lakes of N. Switzerland, and the air less bracing. This is especially felt by the mountaineer, who often forgets that his starting-point is at least 1,000 ft. lower than it generally is on the N. side of the Alps, and who finds the ascent of a mountain 6,000 ft. in absolute height a far more laborious undertaking than he is used to count it. No part of the lake exhibits those softer features that mark the southern end of the Lago Maggiore, where low rounded hills, cultivated to the top, contrast with the steeper shores of the northern extremity. Como is throughout a mountain lake, but it presents three distinct regions that have few common characteristics. The broader northern arm is the most alpine in character. The Monte Spluga (9,351′), backed by the Punta Trubinesca (11,106′), and other snowy peaks at the head of the Val Masino (§ 36. Rte. F), forms a background rivalling in height, though not in grandeur of form, that presented at the head of the Lake of Geneva; but the Legnone (8,560′) far surpasses any of the mountains rising from the shores of the Swiss lake. Although there are many large villages on either shore, this part of the lake is little visited by strangers; and though it abounds in sites that can scarcely be surpassed elsewhere, there are but few villas. These are crowded together in the Como branch of the lake. This is the favourite resort of the wealthy nobility of Lombardy, and of very many strangers who have sought a retreat on these enchanted shores. The Lecco branch of the lake exhibits the extreme of wildness and ruggedness. The narrow space along the edge of the water affords room for a few small villages, but behind them the mountains rise so boldly as to leave no space for cultivation. On the eastern shore the rocks are ranged tier over tier, backed by the bare grey precipices of the Grigna; while on the opposite side the declivity is more unbroken, but the mountains do not attain an equal height.

The navigation of the Lake of Como is a matter of interest to the stranger who visits its shores; for nowhere else in the Alps is boating so universal an occupation and amusement. In the neighbourhood of Como, and that of Tremezzina, it is not unusual, on a fine summer's evening, to see forty or fifty row-boats plying in various directions. Those of the residents all carry a flag, usually some fancy device, so that they are recognised at a distance by acquaintances. In settled weather the S. wind, called *breva*, sets in an hour or two before noon, and subsides in the evening. During the hotter hours it is often so strong, that it is difficult to make way against it in a small boat. The N. wind, or *tivano*, blows gently during the night and early morning. Storms, accompanied by thunder and lightning, are not uncommon, and come and depart very quickly. At such times squalls are often violent, and even dangerous.

Of the many varieties of fish, the most esteemed are trout (Trota), pike (Luccio), and the *Agone*, *Cyprinus lariensis*, a delicate fish, which may be called a fresh-water pilchard, peculiar to the lakes of Lombardy.

The botanist approaching the lake of Como from the north or west, finds that he has entered on a new region, marked by the presence of a number of species that extend throughout the space lying between this lake and that

of Garda. Some of these are found, though less abundantly, beyond the limits here indicated, but most of them are not known to grow elsewhere. The many rare plants found on the Grigna and Campione are specially enumerated in § 38, where the vegetation of the Legnone is also noticed. The following may be considered as characteristic of the limestone mountains surrounding the lake, and in favourable sites most of them descend nearly to the water's edge:— *Clematis recta*, *Aquilegia Bertolonii*, *Viola heterophylla*, *Laserpitium peucedanoides*, *Telekia speciosissima*, *Centaurea Austriaca*, *Leontodon tenuiflorus*, *Hieracium porrifolium*, *Phyteuma comosum*, *Carex baldensis*, and *C. mucronata*.

The neighbourhood of the lake will afford ample occupation for the geologist. The stratified rocks are in some places rich in fossils, and the recent investigations of M. Stoppani have given a special interest to the triassic deposits near Varenna, and to those immediately following the trias, largely developed near Lecco, which that able geologist distinguishes as a separate member of the series of secondary rocks by the name Infra-Lias. In few parts of the Alps are erratic blocks so widely spread or carried to so great a height as on the mountains surrounding the lake, and especially on the ridge dividing its two southern branches. They are chiefly of a granitoid rock, mainly composed of feldspar and quartz, locally known as *Serizzo Ghiandone*.

To the antiquary and the student of early Christian art, there is ample room for investigation, not only in such places as Como and Gravedona, where he will find monuments already well known; but in many of the small villages standing near the lake, or in the surrounding valleys, the churches exhibit more or less well preserved examples of characteristic Lombard architecture, whose history may in most cases be traced back by authentic documents to the original foundation of the buildings.

The best account of the lake and its immediate neighbourhood is contained in a small work by M. Leonhardi, pastor of Brusio in Val Tellina, entitled 'Der Comersee und seine Umgebungen.'

On leaving Colico, the steamer, leaving on the rt. the village of *Gera*, with a population of fishermen, who take large numbers of trout at the mouth of the Adda, crosses the lake to *Domaso*, a beautifully-situated village with a remarkable elm-tree of great age in its piazza. This place is reached on foot or in a char by a road that turns to the W. from the high road N. of the Adda bridge, crosses the Mera just below the L. di Mezzola, and then follows the base of the mountains. Of many exquisite views none surpass that from La Madonna di Livo, on the slope of the *Corno di Durin* (7,156′). The hunters here say that in winter, when pressed for food or by close pursuit, chamois, and even bears, have been known to swim across the lake, and seek refuge in the recesses of the Legnone. The char-road is carried rather more than 1 m. beyond Domaso to *Gravedona*, the largest village on the lake. The good Inn (Albergo del Sasso) formerly open here was closed in 1865. This place, standing at the mouth of the *Liro* (not to be confounded with the Lira in Val di San Giacomo), may vie in natural attractions with the most frequented on the lake. The wine disease and failure of the silk crop have caused great distress here and in the neighbouring villages, and many hundreds have migrated within the last few years. The remains of the ancient castle are scarcely traceable; there is now a beautiful garden on the site, which commands an exquisite view. A palatial residence built in the sixteenth century, by Cardinal Tolomeo Gallio, is now called Palazzo del Pero. It does not contain any remarkable work of art. The parish church of San Vincenzo is very ancient, and contains inscriptions taken from a still earlier

fifth-century church. The crypt is supposed to occupy the site of a heathen temple. The church of San Giovanni Battista, with its porch surmounted by an octagonal tower and some early stone carving, is also very curious. The neighbouring village of *Brenzio* is worth a visit for the paintings by Fiamenghino and Isidoro Bianchi that adorn its church.

A mountain path up the S. bank of the Liro leads from Gravedona to Bellinzona, by the Passo di San Jorio, or to Roveredo by the Passo di Camedo (Rte. F).

There is no road passable for carriages between Gravedona and Laglio near Como. The ancient track, called Strada Regina, whose formation is attributed to the Lombard Queen Theodolinda, is here and there made available for country carts. After passing the summer palace of the Bishop of Como, near a bridge over the Albano torrent, the track reaches *Dongo*, a village with large iron-works and many stately houses, which would be thought worthy of a capital city on the N. side of the Alps. The steamer calls for passengers here as well as at Gravedona, and then crosses the lake diagonally to Dervio (Rte. B). The Strada Regina passes under the *Castle of Musso*, the stronghold of Giovanni Medici, the famous Milanese adventurer, half-hero, half-bandit, whose story is one of the most singular episodes of Italian life in the sixteenth century. Keeping along the side of the mountain, at some height above the lake, the track passes the villages of Musso, Pianello, and Cremia, and then returns to the shore at *Rezzonico*, nearly opposite Dervio, where the lake is contracted to little more than 1 m. in width. The steamer takes passengers here, and then keeps along the E. shore, to call at Bellano and Varenna (Rte. B). Rezzonico was the birthplace of Pope Clement XIII. The village is overlooked by a fine castle, purchased some years ago by the Duca Litta, who designed to convert it into a villa. Between this place and Menaggio the Strada Regina climbs the steep slope of the *Sasso Rancio* (5,478), a bold summit conspicuous in all the views of the middle part of the lake. The track, in some places excavated on the face of the precipitous rocks, was long considered dangerous, and the Russian troops passing this way in 1799 lost many men and horses, who fell over the precipice into the lake. It has been improved of late years. The lake-shore is reached again at Nobiallo, a little solitary village almost cut off from the rest of the world. About 1 m. farther is the large village of

Menaggio (Inns: Vittoria, large new house; Corona, not bad), a place of considerable traffic, being that where travellers from Lugano (Rte. G.) reach the Lake of Como. A Roman inscription, which has given rise to some discussion, is built into the wall of the church of Sta. Marta. Dr. Rezia possesses here an ornithological collection, including all the birds of this district, which is obligingly shown to strangers. On a shelf of the mountain, nearly 1,000 ft. above Menaggio, is Loveno, a village with several villas, the most remarkable of which is the Villa Vigoni, built by the late Milanese banker, M. Mylius. It contains many good specimens of modern Italian sculpture.

To reach Menaggio the steamer crosses the lake from Varenna just at its widest point, and then turns S. to touch at *Bellaggio*, on the W. side of the promontory separating the Como and Lecco branches of the lake, and deservedly one of the chief resorts of strangers on the lake. In the village are the Gran Bretagna and Albergo Genazzini, large and well-conducted Hotels, the former rather dearer, besides more modest inns, Pension Suisse and H. de Florence. Near at hand is the Villa Giulia, once the property of the late King of the Belgians, facing the Lake of Lecco, now a good Hotel and Pension, and the

less convenient Villa Serbelloni, now a *pension*.

This place and Cadenabbia partake in an equal degree of the advantages of a central situation close to the meeting of the three branches of the lake. The writer recommends those who remain but one or two days to prefer Bellaggio, so as conveniently to enjoy the morning and evening view from the grounds of the Villa Serbelloni; while those who spend a longer time here should choose the shore between Tremezzina and La Majolica. The latter, having an eastern aspect, enjoys shade during the afternoon from 2 P.M. to sunset, while Bellaggio, if cooler in the morning, lies exposed to the sun at the time when most persons are disposed to be out of doors. Further than this, the views from Cadenabbia and La Majolica include all the three branches of the lake, the lofty range of the Grigna rising to a great height above the comparatively low promontory of Bellaggio, while it is not visible from that village.

The main interest of a visit to Bellaggio is in the grounds of the *Villa Serbelloni*, so called although the male line of that family is extinct. The grounds belonging to the villa (an ugly building, now a *pension*) occupy the greater part of a rocky peninsula forming the centre towards which converge the three branches of the lake, and overlooking the low isthmus connecting it with the higher mountains to the S. Walks have been carried round the promontory at various levels, in some places cut into the face of the nearly vertical cliffs, or carried by arches from one point of rock to another. The views in every direction are matchless for beauty and variety. One of the most striking effects is produced where a short tunnel, cut through the rock, shows at either end a picture such as is scarcely to be found out of dream-land. Some of the finest villas on the lake are close to Bellaggio. Externally the most striking is the new Villa Frizzoni, in whose architecture and internal fitting-up large expenditure has been combined with good taste. It contains a few good pictures by old masters. The Villa Melzi was built by the great-uncle of the present owner, once vice-president of Napoleon's Cisalpine Republic. With a somewhat plain and heavy outside, this affords in its interior one of the best specimens of an Italian villa. The works of art are chiefly modern, and include a remarkable portrait of Napoleon executed in 1802, and said to be the best extant likeness of his earlier period. The garden contains fine specimens of many trees and shrubs that grow with difficulty in England, but here find a congenial climate, along with several well-executed marble busts and groups of sculpture. The Villa Giulia, now a hotel, mentioned above, is about ½ m. from Bellaggio, on the side of the promontory looking towards the Lecco branch of the lake. The beautiful road from Bellaggio to Asso and Erba is described in Rte. K.

Immediately opposite to Bellaggio, on the W. shore, is *Cadenabbia*, a group of houses opposite the landing-place, with the Bellevue Hotel, a well-kept house, recently much enlarged and embellished, crowded during the summer months. The adjoining houses are let by the month to visitors. Facing the gravel-walk leading along the shore to Menaggio are several small villas; next, the Hôtel de la Belle Ile, with smaller rooms and less handsomely fitted up than the Bellevue, but quieter and cheaper. About 5 min. beyond this is another hotel, larger than the last, called Hôtel de la Ville de Milan, or La Majolica. This, as well as the Belle Ile, are chiefly frequented by Italian visitors, the Bellevue being preferred by English tourists. Those who remain for some time at any of these hotels should make an agreement with the innkeeper. The usual daily rate varies from 6 to 8 fr. per head, according to the rooms occupied, with 3 or 4 fr. each for servants. A private sitting-room is charged extra. Families

arriving in August or September should write beforehand to seeure rooms.

Close to Cadenabbia, in the direetion opposite to La Majolica, is the Villa Carlotta, formerly Villa Sommariva. This is the largest and most stately of all the villas on the lake, and the most famous for its works of modern art. The Cupid and Psyche, the Magdalen and the Palamedes, are counted amongst the best works of Canova; and there are several good statues by other modern artists. But the chief object of interest is Thorwaldsen's famous bas-relief—the Triumph of Alexander—the greatest, and probably the best, work of that great sculptor. Exeeuted for Napoleon, who was to have paid the artist a million of francs, it was purchased after his fall by Count Sommariva for half that sum. The terraces and gardens will appear somewhat contracted to those used to the Crystal Palace of Sydenham, but the elimate supplies the place of art.

Visitors to Cadenabbia usually prefer expeditions that ean be made by water, but those who do not give way to indolence may find various excursions by land, and the naturalist is sure to be rewarded by many objects of interest. There is a delightful walk along the lake-shore to Menaggio, following the aneient Strada Regina, whieh has been in part reconstrueted in consequenee of the eneroachments of the lake. It passes along the base of a very steep round-topped promontory of rock, rising about 2,000 ft. above the lake, and ealled *Sasso di San Martino*. In returning from Menaggio, the mountaineer, especially if he be a botanist, may with advantage clamber up a rather steep ravine on the N. side of the roek and so reach its summit, and then descend by a slightly-marked track to *Griante*, a village on a terrace above La Majoliea. Those who satisfy themselves with a less extensive view may be eontent to reaeh the church of La Madonna di San Martino, standing on a ledge about one-third of the height of the mountain, and reached by a paved path from Griante.

A longer exeursion from Cadenabbia is that to the summit of the *Monte Crocione*, rising immediately to the W., and eommanding a very extensive view. The top, whieh on this side presents the appearance of a steep grass-eovered cone, is separated from the lower slopes by a belt of nearly vertical limestone rocks seemingly impassable, but a practised eye will deteet a cleft by which the barrier is climbed with little difficulty. The summit is about 4,800 ft. above the lake, and as the ascent is steep and hot, from 3½ to 4 hrs., exclusive of halts, should be allowed. The cathedral of Milan, many villages in the plain, and a large portion of the lake, are seen from this commanding point; but the view to the W. is partly cut off by the slightly higher summit of the *Monte Galbiga* (5,600′), which overlooks the head of the Lake of Lugano. There is an extensive cavern in the face of the Monte Crocione which has never been thoroughly explored.

The Villa Carlotta stands at the E. side of a rounded promontory on whose S. face stands *Tremezzo*, a seattered village chiefly composed of houses let for the season to visitors, intermixed with pretty villas. There is here a rather rough Inn, Albergo Bazzoni, fairly well kept, where strangers, chiefly Italian, lodge and board on very reasonable terms. The lake is here seemingly closed to the S. by the promontory of Balbianello, forming a rounded basin about 2½ m. in diameter, screened from all winds, and enjoying the warmest winter position anywhere found on its shores. Delicate persons who cannot support the eold season in the plain of Lombardy sometimes find advantage in remaining here, and many plants that cannot survive elsewhere bear testimony to the mildness of the winter elimate. The E. shore here shows a very steep slope with scarcely a house, and is traversed by a mere goat-track, while the bay, extending

from Tremezzo to Balbianello, is covered with scattered houses and villas. One of the largest of these is La Quiete, belonging to the Marchese Busca. The village of *Lenno*, about 2 m. from Tremezzo, has excited the curiosity of antiquaries by some Roman remains, and by a singular crypt beneath the parish church, which is said to have formed part of a temple. Close at hand is an Early Christian church or oratory.

The promontory of *Balbianello* stands out boldly from the W. side of the lake, stretching nearly half-way across to the opposite shore, with rocks that on both sides run down steeply to a great depth under the water. The finely-situated villa on the extreme point belongs to the Marchese Arconati. On rounding the point of Balbianello the traveller passes to the rt. the little *Isola Comacina*, famous in the early history of Lombardy, and enters upon a new region of the lake, which is here turned towards WSW. After passing along the N. base of the Monte S. Primo (5236′), which slopes very steeply to the water's edge, the steamer touches *Argegno*, where the road from Val Intelvi (Rte. H) reaches the shore. There are two small country Inns (best is Vapore), offering indifferent accommodation. In 1848 the people of Val Intelvi, under the guidance of an innkeeper of San Fedele, successfully resisted an attempt of the Austrian troops to land at this point. A few days later the latter effected their entrance to the valley from the S. side, and the obscure village hero was taken prisoner and shot at Como.

From Argegno the lake extends due S. about 5 m. between steep and high mountains that give a somewhat stern character to this portion of its shores. On the E. bank is *Nesso*, where a pretty waterfall is seen in a deep cleft or ravine, called Orrido di Nesso. A path mounts steeply from Nesso to a high plateau on the N. side of the Monte S. Primo, and thence descends into Val Assina (Rte. K). Opposite to Nesso the village of Brienno lies close to the W. shore at the base of a steep slope. Oil made here from the fruit of the bay (*Laurus nobilis*) commands a high price in the market. S. of Brienno is Torrigia, a hamlet belonging to Laglio, chiefly remarkable for a cavern, named *Buca dell'Orso*, reached by a rough and steep path in about $\frac{3}{4}$ hr. This cavern excited much interest amongst the geologists of Lombardy by a large number of bones extracted from it some years ago, for the most part belonging to the cave bear, *Ursus spelæus*, so commonly found in similar situations in France and England. There is a nearly complete skeleton in the museum at Milan, and a large collection at Laglio belonging to M. Casella, who has been one of the most diligent explorers. The cave contains two, if not more, small pools or underground lakes, whose water keeps a constant temperature of about 49° Fahr. A naturalist wishing to explore the cave may apply for advice and assistance to Don Baldassare Bernasconi, a well-informed priest at Torrigia, to whom the writer is indebted for much information as to the adjoining Val Intelvi. This gentleman, in 1863, descended a vertical chimney-like shaft 68 ft. deep, lately discovered in the cavern, but merely found some rolled fragments of bones of ruminants, probably washed into it by a rise of the water in the cave. No traces of flint weapons, or other tokens of man's presence, have been discovered here. On the E. side of the lake opposite Torrigia there is a cave above Carena, called Grotta della Maseda, somewhat similar to the Buca dell'Orso, but of larger dimensions, and deserving careful examination. S. of Torrigia on the W. shore is *Laglio*, where the traveller remarks a colossal monument to a Dr. Franck, who left 25,000 fr. by will to immortalise his own memory in this manner. On the opposite shore some way farther S., in an angle shaded from the morning and midday sun, lies the *Villa Pliniana*, standing in the coolest position on the lake. The name of Pliny is connected

with the spot by a remarkable ebbing and flowing spring rising close to the villa, and accurately described by the younger Pliny. The cause of its regular daily oscillation has not been satisfactorily explained. It is apparent that the calcareous mountains in this neighbourhood must be penetrated by extensive cavities that are partly filled with water. Near the village of Molina, a short way E. of the Pliniana, an engineer employed to construct a mill early in this century removed a mass of rock, and, in so doing, opened the way for a subterranean current which burst out from the side of the mountain, and forms in succession two pretty waterfalls—one of 75, the other 130 ft. Though not comparable to the greater waterfalls of the Alps, they deserve a visit for the sake of the singularity of their origin. The Villa Pliniana contains no important works of art. The first Napoleon resided here for a short time after completing the betrayal of the Venetian Republic by signing the treaty of Campo Formio.

On the W. shore, nearer to Como, is *Moltrasio*, with many villas about it, of which the largest is that of Count Passalacqua, who has made an interesting collection of antiquities found at various places on the shores of the lake. On the opposite side, on a projecting point of land, is

Torno, once a place of great wealth and importance, the rival of Como, but reduced to insignificance in the 16th century, when it was taken and sacked by the Spaniards. From hence to Como both shores of the lake present a succession of villas of very varied architecture. The inhabitants on the E. side have been lately disquieted as to the security of their dwellings. Early in 1864, one richly-furnished villa at Blevio, with the adjacent ground, slipped bodily into the lake, and fissures have been seen that seem to portend further disaster. On this side the shore is steep, and the villas are accessible only by water or by a rough mountain-path. On the W. side of the lake approaching Como the slope of the mountain is more gentle, and the carriage-road, long open as far as Cernobbio, has been carried on to Laglio. At *Cernobbio*, about 3 m. from Como, the large building formerly known as Villa d'Este, inhabited for some time by Queen Caroline of England, and much discussed during her trial, has been lately converted into an hotel (Regina d'Inghilterra), said to be the best conducted on the lake, and deservedly much frequented. It cannot, however, be compared for the beauty and variety of the surrounding scenery to the neighbourhood of Bellaggio and Tremezzo. A pedestrian may reach in about 2½ hrs. from the hotel the summit of the *Monte Bisbino* (4,416′), a conical mountain with a chapel on the top, commanding a beautiful view extending to Monte Rosa.

At the head of the long bay extending hither from Bellaggio is the ancient city of

Como (Inns: H. Volta, formerly Angelo, rebuilt and admirably fitted up, and well conducted; Italia, on the opposite side of the port, tolerable; Corona, and other second-rate houses). The stranger arriving for the first time in Italy will be surprised at the scale of the public and private buildings in a town of second-rate importance. The cathedral is a very interesting building, though injured in architectural effect by the confusion of various styles, having been begun in the 14th, and not finished till the 18th century. The Broletto, or town-hall, is a purer specimen of Italian mediæval art, dating from the 13th century. There is a modern theatre deserving notice as one of the finest in Italy.

Three ancient churches, all of them believed to occupy the sites of heathen temples, well deserve the attention of the antiquary. The oldest is that of S. Carpoforo, built, as it is said, in the 4th century by the first Bishop of Como. The church of S. Fedele, on a larger scale, dates from the 6th century. Several fragments of Roman sculpture, and amongst them a colossal head of

Julius Cæsar, were found in excavating near it. More interesting than either of these is the church of Sant'Abbondio, one of the best extant specimens of early Lombard architecture, with extremely curious stone carving. This stands a little out of the town, about a mile from the cathedral.

The station for the railway to Milan is at Camerlata, 1½ m. distant from the port, and at a considerable height above the lake. Omnibuses ply to and fro to meet the trains. There are five trains daily each way, performing the distance—about 28 m.—in little less than 1½ hr.

Route B.

COLICO TO MILAN, BY LECCO.

	Eng. miles
Varenna	11
Lecco	14
Monza	20
Milan (by rail)	8½
	53½

The road along the E. shore of the Lake of Como, between Colico and Lecco, forms part of the great military road of the Stelvio, constructed at a vast expense by the Austrian Government to connect Milan with the Tyrol, but which was not found to be of any practical utility in the two campaigns in which Austria has contended for the possession of Lombardy. Most travellers prefer to travel between Colico and Milan by the lake-steamer to Como, and then by rly.; but those who have already enjoyed that Rte. may well take the road to Lecco, and join the Como rly. at Monza. Since the opening of the rly. from Lecco to Bergamo, this is the shortest way for travellers bound for the latter city, and other places on the line leading to Verona and Venice. Colico (noticed in the last Rte.) is one of the places from whence the ascent of the Legnone is sometimes made, but it is a better plan to start from Premana or Pagnona, in the valley of the Varrone. See § 38, Rte. H.

The first village passed after leaving Colico is *Olgiasca*. From hence a promontory stretches into the lake, and all but completely encloses a small sheet of water called *Lago di Piona*. This is a favourite resort of waterfowl and of some sorts of fish, and large numbers of both are taken here in winter. The names of the villages of Dorio, Corenno, and Dervio, passed in succession by the high road, are supposed to be of Greek origin, and local antiquaries assert that these, as well as several other places on the lake, were peopled by Greek colonists, settled here in the time of Julius Cæsar—a belief that seems to rest upon slight foundations. *Corenno* has a modernised castle belonging to the Andreani family, who have held it for nearly 500 years. The Castle of Dervio was of much importance in the Middle Ages, and being deemed impregnable, gave its possessors great local influence. The village of *Dervio* lies at the mouth of the Varrone, a little to the rt. of the road. About 2 m. farther is

Bellano (Inn: Albergo della Torre, very fair country inn), a large village with a considerable manufacturing population. There are extensive ironworks, a large factory for spinning and weaving silk, and several paper-mills. The village stands at the opening of Val Sassina (§ 38, Rte. E), at no great distance from a fine waterfall of the Pioverna, which drains that beautiful valley. This is the finest of the many waterfalls near the shores of the lake, but it was much injured by the fall of some large masses of rock. The parish church is large, and has some good pictures by early Lombard mas-

ters. The W. front exhibits side by side the arms of the Torriani and Visconti, whose mortal enmity fills so large a space in the contemporary history of Milan. Being much exposed to cold winds, Bellano passes for the coldest, as the neighbouring village of Varenna counts as the hottest place on the lake. Hence the distich—

'Chi vuol provar pene d' inferno,
Vada d' està a Varenna, ed a Bellan d' inverno.

The portion of the shore between Bellano and Varenna presented great difficulties to the construction of the military road. The rocks in many places sink in a sheer declivity to the water's edge, and plunge at a high angle under the lake. Five tunnels pierced through the crystalline milestone give a passage to the road. On a terrace from 500 to 600 ft. above the lake, stands the Hydrotherapic Establishment of Regoledo, said to be very well kept, and much frequented by Milanese visitors. The beauty of the site and the purity of the air probably contribute much to the salutary effects attributed to the water-cure.

Varenna (Albergo Marcionni, good, beautifully situated on the lake, prices rather high), on a headland of the E. shore, a little above the promontory of Bellaggio, and exactly opposite to the fine peak of the Sasso Rancio. It affords excellent head-quarters to the geologist and the botanist, who find ample employment in the glen of Esino, described in § 38, Rte. F. This cannot, however, be recommended as a stopping-place to ordinary visitors. The popular verse quoted above truly declares it to be intolerably hot in summer: from an early hour in the morning until late in the evening there is no shade to be found, and bathing in the lake seems to be the only resource of those who fear to expose themselves to the sun's heat, doubled in intensity by reflection from the surrounding rocks. Rooms are (or were lately) let during the summer in the large building which was formerly known as Albergo della Posta. The cypresses in the garden here are amongst the finest in Europe. Some orange and lemon trees that grow in the open air have perished either from cold or disease during the last few years. The ruined castle, reached by a steep, but partly shaded path, affords a noble view, but scarcely superior to that gained from the hotel. Less than 1 m. from Varenna is the *Fiume Latte*, a rather remarkable cataract, fed by a torrent that bursts out from the side of the mountain about 1.000 ft. above the lake. It is supplied by subterraneous drainage from the upper ridge of the Grigna, and being mainly fed by the winter snow, dwindles away in autumn, and bursts out again in the following spring. The high road is carried along the base of a high and steep terrace of the Grigna, concealing from view the upper part of that mountain. Near Olcio the rocks approach so near the lake-shore, that some tunnelling was requisite for the construction of the road. On a point of land formed by the detritus of the Neria torrent, a little to the rt. of the road, stands

Mandello, a thriving village, with a tolerable country Inn. Following the course of the Neria, a path leads NW. to Val Sassina, joining the path from Varenna near the summit of the Cainallo Pass (§ 38, Rte. F). A practised climber may reach the highest peak of the Grigna from this side, but the way is long and very steep.

Since leaving Varenna, the road has been carried along the E. shore of the Lecco branch of the lake, sometimes called *Lago di Lecco*. This presents a striking contrast to the branch leading to Como, which is described in the last Rte. In place of the abundant tokens of human activity, we here encounter a sterner aspect of nature, and scanty traces of man's presence. Save the two small hamlets of Limonta and Onno, the W. shore of the Lecco Lake is almost completely uninhabited. A steamer now plies daily (twice on Sundays) between Lecco and Colico, calling at Bellaggio and Cadenabbia;

but only a few barges are seen, each with a large square sail urged by the *breva* to the N. during the warmer hours of the day, or taking advantage of the *tivano* at night, to carry their cargoes to Lecco. More than once the writer has enjoyed a peculiar and very striking scene in travelling by water at night from Tremezzina or Varenna to Lecco. In approaching Lecco, where the lake is scarcely 1 m. in width, the boat passes near the base of the Como di Canzo. Numerous lime-kilns are established along the water's edge, and, probably to avoid the great heat of the day, the fires are lighted in the evening, and fed during the night with huge faggots of brushwood cut on the slopes of the mountain. Then a fierce blaze sends a beam of red lurid light across the lake, and in passing opposite to each kiln, the dark outlines of the men engaged in feeding the fire form groups such as the old painters vainly endeavoured to depict in their representations of the infernal regions.

On the way from Mandello the road passes but the single small village of Abbadia, and passing along the base of very steep rocks, buttresses of the Campione or Southern Grigna, in about 4 m. more reaches

Lecco (Croce di Malta ; Alb. d'Italia; Leone d'Oro; all fair, first is best), a populous town, with large factories for spinning silk, and several iron-works. The position is very picturesque. To the N. rise the bare rocks of the Campione, to the E. the no less rugged range of the Resogone, while on the opposite shore of the lake is the Como di Canzo, noticed in Rte. K.

Opposite Lecco the lake is contracted into a strait with a sensible current, but it is soon enlarged into a large sheet of water, called *Lago di Garlate*, fully 4 m. long and nearly 1 m. in width. The road to Ballabio and Introbbio is described in § 38, Rte. E, where the botanical reader will find notes as to the flora of this district.

A long bridge of ten arches crosses the narrow neck of the lake close to Lecco, and the road to Milan is carried along the W. shore of the Lake of Garlate. At *Olginate* this is contracted to the dimensions of a river, but expands again into a smaller basin called *Lago d' Olginate.* Near the S. end of this last extension of the L. of Como are huge erratic blocks, and the remains of great moraines deposited here by the ancient glacier of the Adda. The road traverses a fine country, rich in silk and wine, on the outskirts of the Brianza (Rte. L), before reaching

Monza (Inns: Falcone ; Angelo). The cathedral is a building of the highest interest. Commenced by the Lombard Queen Theodolinda. it was rebuilt in the 14th and completed in the 15th century, and contains some curious fragments of early stone carving. The sacristy, though partly destroyed by the French, still contains some of the most curious remains of the art of the 6th and 7th centuries. They include many objects said to have belonged to Queen Theodolinda, including a copy of the Gospels, a cross presented to her by Pope Gregory the Great, and a MS. list of relics sent to the queen by the same pope, and believed to be his autograph. No less noteworthy is the missal of Berengarius, who became king of Italy on the death of Charles le Gros in 888. The carving of the ivory covers is extremely curious. Three carved ivory diptychs preserved here have afforded occasion for discussion amongst antiquaries. They appear to be Roman work. More famous than any of the above-mentioned objects were the pectoral cross and iron crown used in the coronation of the kings of Italy. In modern times the latter has served alternately for the coronation of the first Napoleon and the three last emperors of Austria. It was removed by the Austrians in their retreat from Lombardy in 1859.

The royal palace at Monza is a large building of plain architecture, with an extensive enclosed park and well-laid-out gardens.

Milan (Inns: H. Cavour, facing the public gardens, the best for families who engage a sitting room; Albergo di Milano, opened 1863, large house; Alb. della Villa, not so well managed as formerly, dear; Alb. Reale, very well conducted; Hotel Reichmann, chiefly frequented by Germans, good, prices rather less than those above mentioned; Gran Bretagna, said to be good, but rather dear; Marino, not so well managed as formerly. The following are cheaper: Europa; H. de France—both conveniently situated, the first especially reasonable; San Marco; Bella Venezia, fallen off; Pensione Svizzera; Alb. del Pozzo; Alb. degli Angeli—the last frequented by lovers of Milanese cookery).

Even a brief notice of this great city would exceed the limits of this work.

Route C.

BELLINZONA TO COMO, BY LUGANO.

	Post leagues	Eng. miles
Bironico . . .	3¼	9¾
Lugano . . .	2¾	8¼
Mendrisio . . .	3¾	11¼
Como	2¼	6¾
	12	36

In posting travellers pay for 4⅝ posts, or about 39½ m.

In the mountain district lying between the two greater lakes of Lombardy is a deep sinuous depression occupied by the Lake of Lugano, by many thought to be no unworthy rival of its more famous neighbours. This lies on the high road leading from the Pass of St. Gothard to Milan. It was seen in § 32, Rte. A, that the only direct way to descend from the St. Gothard to the plains of Piedmont is by water, along the Lago Maggiore. A road traversed twice a day by diligences passes the ridge dividing the lower valley of the Ticino from the basin of the Lake of Lugano by the low pass of Monte Cenere, a serious but not insuperable obstacle to the projected railway from Milan to the Lake of Constance by the Lukmanier Pass.

Carriages with two horses from Bellinzona to Lugano cost 25 fr.; to Como, or Camerlata, 50 fr. The price of a place in the diligence to Camerlata is, in the coupé, 10 fr. 60 cent.; in the interior, 8 fr. 70 cent.

About 5 m. from Bellinzona the road to Magadino bears to the rt. along the level valley of the Ticino, at the point where the high road to Lugano begins to mount the slope of the *Monte Cenere*. The ascent is not steep, but rather tedious, the views not being of much interest. The pedestrian may shorten the way by a short cut, but must beware of losing his way in the thicket. The apprehensions of danger from robbers, once well founded, have long since disappeared, owing to improvements in the cantonal police. The summit level, 1,903 ft. above the sea, is reached after an ascent of 1 hr., and the road at once commences the gradual descent to Bironico (1,482′), near the banks of the *Agno*—one of the chief feeders of the Lake of Lugano—which here descends from the S. side of the *Monte Camoghè* (7,304′), one of the highest summits in this neighbourhood, sometimes ascended for the sake of the view, sometimes by botanists, who find several very rare plants on its upper ridge. [The way to the Camoghè lies from Bironico to *Isone*, 1½ hr. distant, where rough quarters may be found for the night, but it is well to take provisions. An easy ascent of about 3½ hrs., which would be practicable on horseback, leads from Isone to the summit, but the stranger starting before daylight to secure a good chance of the view should take a guide from the village. The panorama extends from

Monte Rosa to the Orteler Spitze, but it is somewhat broken to ESE. by the slightly higher summits of the Pizzo Menone and Pizzo di Gino. The botanist who seeks to gather the very rare *Androsace Charpentieri* in flower should visit the mountain before the end of June. There appears to be no difficulty in descending along the ridge to the E. into the Val Cavargna, and so to Porlezza or Menaggio.] The high road follows the rt. bank of the Agno from Bironico to *Taverne*, where there is a decent country Inn, and thence to Ostarietta. One road follows the Agno to the lake-shore at the village of that name (Rte. G), but to reach Lugano it is necessary to traverse the low ridge connecting the peninsula crowned by the Monte Salvatore with the higher mountains to the N. The summit level is reached near the village of Vezia, and the descent to Lugano presents charming views of the lake and the surrounding mountains. The diligence from Bellinzona takes 4 hrs. to reach

Lugano (Inns: Hôtel du Parc, large, handsome and well-kept house, formerly a convent, just outside the town; Pension Belvedere, kept by the same master for families making some stay—charge 9 fr. daily in summer, 6 fr. in winter—there is an English chapel connected with the hotel; H. Washington, new, and Alb. Svizzero, kept by the same proprietor, fairly good; Corona, poor). This is the largest of the three towns that divide the first rank in the Canton Tessin. It is beautifully situated along the shore of the lake, but does not contain many objects of interest, except some very fine frescoes by Bernardino Luini in the church of Sta. Maria degli Angeli, where there is also a remarkable Madonna by the same master. The façade of the church of San Lorenzo is adorned with some curious stone carving. There are many fine gardens here, of which the Giardino Ciani especially deserves a visit. It contains a statue—La Desolazione—by the eminent sculptor Vela, a native of this canton: he has a studio in the town.

The chief object of interest to a stranger at Lugano is the *Monte Salvatore*. It is impossible to speak of it without some reference to the lake on whose shores it is so conspicuous. The form of the Lake of Lugano, also called Lago Ceresio, is strange and irregular; it has been compared to a fish-hook, a sickle, and various other objects, but may, perhaps, be best understood if we consider its W. end as a nearly regular oval basin, about 6 m. long and 5 m. wide, in the midst of which a steep conical rock has been raised about 2,100 ft. above the level of the water, connected with the N. shore by a neck of land about 2 m. in breadth. Lugano stands on the E. side of this isthmus, and a tolerably straight arm of the lake extends opposite to the town towards ENE. about 9 m. A shorter arm extends to the S. as a bay about 3 m. in length. The height of the lake above the sea is 889 ft.; its depth is very irregular, but soundings have been made to a considerable depth below the level of the sea. It follows from this description that the Monte Salvatore is all but completely encircled by the lake, whose surface is nearly all visible from the top of the mountain. The ascent is frequently made, and the path may be found without a guide by a person used to mountain-walking. Horses may be taken to the top. Charge for a guide, 4 fr.—for a mule 6 to 8 fr., with a buonamano to the conductor. Rather less than 1 m. from the town a track turns to the rt. from the high road. After passing a pretty villa, this reaches the hamlet of Parzallo in about ¾ hr. from Lugano. Nearly 1 hr. is required for the ascent from thence to the summit, 3,051 ft. in height. The view is extremely beautiful, and though partly limited by the higher mountains around, includes a great part of the range of Monte Rosa. Looking over the southern branch of the lake, between the Mte. Generoso and the Mte. di San Giorgio, the traveller may, in clear

weather, descry the cathedral of Milan. The Monte Salvatore is extremely interesting to the geologist. It is formed by the protrusion of a mass of porphyry through stratified limestone, and the fact which has excited much attention is the apparent conversion of the latter into dolomite as it approaches to a junction with the porphyry. This is very well seen by the road leading from Lugano to Melide, on the way to Como. The tour of the Monte Salvatore is a very pleasant excursion from Lugano. The circuit may be made on foot or in a boat, and the return to Lugano is by the road from Luino (Rte. G), joined somewhere near Agno. The convent of *Bigorio*, lying E. of Taverne, on the road from the Mte. Cenere to Lugano (see above), affords a very pretty walk or ride from Lugano; the church is said to contain some good pictures. Many other pleasant expeditions may be made either by land or water. Of the latter that most recommended is to the *Monte Caprino*, rising from the lake immediately opposite to the town. Numerous natural caves have been artificially enlarged, or arranged so as to become available as wine-cellars, where the temperature remains cool during the hottest weather. The custom of forming drinking-parties to visit such places is common in Tessin, and extends to the neighbouring shores of the Lake of Como. The word *grotto* is commonly used for a cellar of this description formed in the rock. As a general rule, it implies that wine is not only kept, but sold by retail. The way to Porlezza, at the E. end of the lake, deservedly a favourite excursion from Lugano, is described in Rte. G. A steamer plies twice every day to Capolago, and once a day (on five days of the week) to Porlezza.

The road from Lugano to Como is carried along the shore under the steep rocks of Monte Salvatore for nearly 4 m. to *Melide*, where the shallowness of the lake is such as to allow the formation of a causeway across it, connected at either end with the land by a bridge that allows the passage of steamers and barges. Having crossed the causeway to a place called *Bissone*, probably deriving its name from the vipers which—as well as scorpions—are common near the shores of the lake, the road runs along the shore under projecting spurs of the Monte Generoso, which presents a very steep face on this side. At the end of the S. arm of the lake, about 8½ m. from Lugano, is

Capolago, a place well known for the printing establishments whence prohibited works of every description were carried into Italy, before the recent changes that have established there full liberty of the press. Nearly 3 m. farther is the large village of

Mendrisio (Inns: Angelo, tolerable; a large new house to open in 1873), whence omnibuses ply to Como. At the house of Dr. Pasta, the owner of the establishment, mules are found for the ascent to the large new hotel on the Monte Generoso. A guide is not required. For an account of that mountain see Rte. H. The last Swiss village, 4 m. beyond Mendrisio, is *Chiasso*, standing at the extreme S. point of the territory of the Confederation. The frontier of Italy is formed by a small stream, beyond which stands the custom-house. This is but 2 m. distant from Como (Rte. A). Passengers going to the railway may proceed direct to Camerlata without entering Como.

Route D.

CAMPO DOLCINO TO MESOCCO.

Having described the main roads by which travellers entering Italy from the N. approach the Lakes of Como and Lugano, it seems desirable to notice the transverse passes across the mountain range extending from the Tambohorn to the neighbourhood of Como. As regards those mentioned in this and the following Rtes. little or no information has reached the Editor, and an attempt at a personal examination of some of them was frustrated by bad weather.

1. *By the Passo di Balniscio* (7,715′). This is the northernmost of the passes connecting the Val di San Giacomo with the Val Mesocco. It leads from Isola, the chief village at the head of the former valley (about 1½ hr. above Campo Dolcino) to a point between San Bernardino and Mesocco (§ 31, Rte. A), but rather nearer to the former. The distance is not great, but the pass is rather high and very rough, the way being described as a path for chamois. Nevertheless, an active mountaineer may reach S. Bernardino from Isola in little more than 4 hrs. The descent on the W. side lies immediately S. of the *Cima di Balniscio* (9,967′) and the *Pizzo di Curciusa* (9,422′). The traveller should take a guide, and, including halts, should allow from 7 to 8 hrs. to reach either S. Bernardino or Mesocco from Campo Dolcino.

2. *By the Passo Bardan.* This appears to offer a more direct course than the last-mentioned path between Campo Dolcino and Mesocco. This pass lies between the *Cima di Bardan* (9,387′) and the *Dosso Mottasio* (9,879′). The summit is 8,490 ft. above the sea. No further reliable information can be given respecting it.

Route E.

CHIAVENNA TO ROVEREDO.

1. *By the Passo della Forcola* (7,274′). Though lower than either of the passes named in the last Rte., this is longer and more laborious, the two extremities lying at a much lower level. The way from Chiavenna is at first SW., by the W. bank of the Mera. The ascent commences near the village of *Mese*, and the ascent lies WNW. to the summit of the pass. The direct way down is through the Val della Forcola, a glen opening into Val Mesocco, a short way above the waterfall of Buffolara. The traveller bound for the lower end of the Val Mesocco may probably save some time by following a track that diverges to the W. from near the top of the pass, and after winding round several projecting buttresses, descends into the main valley near Lostallo, where there is a decent Inn (§ 31, Rte. A). This has been spoken of as a difficult, and even dangerous pass, probably on insufficient grounds, as it is frequently used by the people of Val Mesocco.

2. *By Val Bodengo.* The Val Bodengo is a lateral glen, drained by a tributary of the Mera which joins that stream about 4 m. S. of Chiavenna. It appears that there is more than one practicable pass over the ridge at the head of this valley extending northward from the *Pizzo d'Agnone* (8,513′). The descent on the W. side lies through a short glen opening opposite to Cama in Val Mesocco. Mr. Sowerby, who passed this way in 1865, found slight traces of a path, and encountered numerous difficulties. This way is very unfrequented, and further information is requested.

Route F.

GRAVEDONA TO BELLINZONA.

The way first described below is a comparatively frequented path; the other is little used.

1. *By the Passo di San Jorio* (6,417′). 8 to 8½ hrs. exclusive of halts. Practicable for horses only on the Italian side. The woods having been partly cleared, the walk is very hot in summer. It would be judicious to start before daylight. The path from Gravedona ascends along the S. side of the *Liro* torrent. On the way the traveller may visit the church of Brenzio, where are some of the best works of the painters Fiamenghino and Isidoro Bianchi (see Rte. A). Fully 4 hrs. are required to reach the summit of the pass, lying about due E. from Gravedona. In approaching it the track keeps for a while along the crest of the ridge dividing the valleys of the Dongo and Liro, which commands a very fine view, especially to the E. toward the ranges enclosing the Val Tellina. Close to the top is a small chapel, but the easiest path leaves it to the rt., and after crossing the ridge, winds back to the rt. for a considerable distance. On the Swiss side the shortest way in distance to Bellinzona is along the ridge on the N. side of *Val Morobbia*. The ordinary and easiest way is to descend into Val Morobbia. The ancient track has been covered or carried away, and the path, sometimes scarcely marked, is extremely rough. After crossing the stream and returning to rt. bank, the path ascends, and after many intermediate ups and downs reaches Carenna, and then St. Antonio. The worst part of the very fatiguing paved path, often cut up by streamlets, is between the last hamlet and Pianezzo. Then a steep descent leads to *Giubiasco* on the high road ½ m. below Bellinzona. There is a path from Dongo (Rte. A) by which a traveller may reach the S. Jorio Pass very nearly as soon as from Gravedona. It joins the regular track near the summit.

2. By the *Passo di Camedo* (7,028′). Information is wanting as to this pass, which is a longer and more laborious way than the last, but must lead through very beautiful scenery. The way to it lies through a NW. branch of the Liro, and the descent is through the *Val Traversagna*, opening opposite to Roveredo in Val Mesocco (§ 31, Rte. A).

Route G.

LUINO TO MENAGGIO, BY LUGANO.

	Post leagues	Eng. miles
Ponte Tresa . .	2¼	6¾
Lugano . . .	2¼	6¾
Porlezza . . .	3	9
Menaggio . . .	2¾	8¼
	10¼	30¾

This is now a deservedly frequented Route, and as it is especially recommended to travellers visiting the Italian lakes for the first time, and approaching them from the W. side, it is here described accordingly. There is no way in which the scenery can be seen to greater advantage, and at the same time this course is the easiest and most direct for those coming from the Simplon Pass or from Piedmont.

Luino (Inns: A new large house—H. Simplon?—Alb. della Beccaccia, to the rt. of the landing-place, fair; several smaller inns in the village), as mentioned in § 32, Rte. A, is one of the principal stations of the steamers on the Lago Maggiore. A post-carriage leaves Lugano for Luino at 9 A.M., and returns from that place at 4 P.M. Besides this, many vehicles are always ready for hire. Amongst them are usually some carriages belonging to the Hôtel du Parc, and the traveller intending to halt there will usually do better to take one of these, rather than encounter the trouble and annoyance of bargaining. Luino stands about

½ m. N. of the mouth of the *Tresa*, through which the drainage of the L. of Lugano is poured into the Lago Maggiore. As the difference of level is considerable—nearly 250 ft.—the Tresa is a swift stream, forming rapids, and in one place a continuous cataract. The road to Lugano takes a course parallel to the Tresa, but at some distance to the N., over ground that recalls the appearance of the hilly districts of Britain, e.g. S. Wales, more nearly than usual in Italy. The likeness is increased to the eye of the botanist, on observing that the plants are nearly all of British species; the common heather, *Betonica*, *Drosera*, *Rhynchospora alba*, with many rushes and sedges, being predominant. The frontier between Italy and Switzerland is passed about 3 m. from Luino. The custom-house officials are usually satisfied with a civil assurance from the traveller that he has no articles liable to duty. The country becomes richer and more picturesque as the traveller, after a slight descent, reaches

Ponte Tresa, a village standing at the point where the Tresa flows out of a small landlocked bay of the L. of Lugano. A bridge over that stream gives passage to a road that leads due S. to Varese, or SW. to Laveno (Rte. I). The road now traverses a tongue of land, and finally reaches the shore of the L. of Lugano, a short distance from *Agno*. This end of the lake is called Lago d'Agno. The village stands at the opening of the valley traversed by the Agno torrent, leading to Bironico and the Monte Camoghè (Rte. C). It is easy to reach the road from Lugano to Bellinzona at Osta-rietta. [An active pedestrian, instead of following the direct road, may turn to the rt. at Agno, and make the circuit of the Monte Salvatore, passing all the way along the shore of the lake. See Rte. C. Nearly 4 hrs. should be allowed for the circuit.] The road from Agno to Lugano traverses the isthmus connecting the Mte. Salvatore with the N. side of the lake, ascending slightly, and passing along the S. side of the pretty Lago di Muzzano, a small basin of clear water, lying amidst wooded slopes. The descent to Lugano commands a beautiful view. For a notice of that town and neighbourhood, see Rte. C.

Most strangers bound for the L. of Como will avail themselves of the steamer to Porlezza, unless they should prefer to hire a boat in order to enjoy the scenery more at their leisure. There is a rough track along the mountains on N. side of the lake, passing Gandria. It involves several ascents and descents, and fully 4 hrs. should be allowed for reaching Porlezza that way. The scenery of the E. branch of the L. of Lugano, though it cannot rival the grandeur of its greater neighbours, has a charm of its own that leaves a deep impression on all lovers of natural beauty. Its characteristics are a rich wildness, and voluptuous simplicity—such as nature here assumes, with little or no interference from man. The slopes on both sides are steep, but in most places the rocks are not bare; chestnut-trees and flowering shrubs cling to the crevices, and let their branches fall to the margin of the lake. Here and there are some small groups of houses, but in most places the shores show no sign of man's presence, and though there are practicable paths, they do not strike the eye. At *Drano*, on the N. shore, a torrent descends to the lake which, with several short branches, drains a recess in the mountain called *Val Solda*. On the opposite shore are Osteno and Claino, mentioned in the next Rte. At the E. extremity of the lake is

Porlezza, a poor village, but a place of some traffic, being on a much-frequented road between the Lake of Como and the Canton Tessin. Here the traveller finds many vehicles in readiness to take him to Menaggio. For a carriage with one horse the charge is 5 or 6 fr.; with 2 horses, 10 fr. An active pedestrian may walk in very little more time than is taken by a

carriage. A gentle ascent of 2½ m. leads to a plateau, where the little lake of Piano lies on the rt. of the road. Thence the way continues to ascend very gently, until it reaches a point where the traveller suddenly gains an exquisite view over the finest part of the L. of Como. The descent is longer and steeper than the ascent on the Porlezza side, and the pedestrian may cut off some zigzags on the way down to Menaggio. If bound for La Majolica or Cadenabbia, he may keep to the rt. on entering the village, and at once strike into the path that leads to those places along the lake (see Rte. A). Most travellers prefer to take a boat, or to await the arrival of the steamer.

[In the ascent from Porlezza the road crosses a stone bridge over the *Cuccio* torrent. This issues from *Val Cavargna*, and is formed by the confluence of many minor streams descending from the mountains enclosing the head of that valley, most of which exceed 7,000 ft. in height. The lover of wild scenery may well give a day to exploring this unfrequented glen, ill famed in the Middle Ages for its population of notorious bandits, the terror of their richer neighbours. Several small hamlets stand on the slopes about the entrance to the valley, where the Cuccio has cut for itself a cleft 200 ft. deep through the limestone rock. There is a practicable path on either side of the stream. From *Cavargna*, the highest village, a path leads eastward over an easy pass (5,043′) into Val Colla, and descends through very picturesque scenery by Sonvico to Lugano. There is also a mountain track due N. from Cavargna, passing on the W. side of the *Pizzo Menone* (7,372′), by which the mountaineer may reach the head of the Val Dongo, and descend along the rt. side of that glen to Dongo (Rte. A). The people of Val Cavargna preserve many ancient customs, but in modern times they have not been accused of any worse crime than smuggling, to which their position on the frontier of Switzerland offers irresistible temptations.]

Route H.

ARGEGNO TO OSTENO, BY THE VAL INTELVI — ASCENT OF THE MONTE GENEROSO.

About 14 Eng. miles.

If the way described in the last Rte. be the most striking approach to the Lake of Como, the road here described, through Val Intelvi, is equally to be recommended to those going from that lake to Lugano. There is a paved bridle-track, partly passable for chars; but a new carriage-road has been for some years in course of construction, and is probably now open.

Val Intelvi is the name given to a small district occupying a depression in the mountain range dividing the L. of Como from the L. of Lugano. It is not a single valley, but an aggregate of short combes or dells, drained by two streams, of which one falls into each lake. The central portion is a plateau called Piano di S. Rocco, about 1,200 ft. above the level of the L. of Como. From thence the ground sinks rapidly on either side, eastward to Argegno, and northward to Osteno on the L. of Lugano. Although the distance by road between those places scarcely exceeds 10 m., the district has a population of about 11,000 inhabitants, and includes no less than 22 parishes, about half of which lie on the central road, and the remainder in the short lateral valleys that open on either hand. Nowhere but in Italy can a small and remote district such as this boast of having produced so many men distinguished in Art. Each village has

its roll of worthies extending back to the early part of the 14th century. The Cathedrals of Milan, Como and Monza, the Certosa of Pavia, and many great works at Genoa and Venice, were either originally designed or their building carried out by architects born in these mountain villages. Isidoro Bianchi, and several others of the later Lombard school, make up a respectable list of painters; and some names not unknown in literature complete the catalogue. Until the recent disease in the silk-worm affected the crop, the district was very productive of silk, and is throughout richly cultivated.

The paved tract mounts from Argegno on the L. of Como, noticed in Rte. A., and after a rather steep ascent of ½ hr. reaches the level of the valley, and soon after the village of *Dizasco*. The tract here bends to the rt., or NW., as far as *Castiglione*, the principal village. To the l. two lateral valleys are passed, separated from each other by a conical summit which is crowned by an ancient chapel, conspicuous in the view to SW. from Tremezzo. The next place on the way to Porlezza is *S. Fedele*, with an ancient church of the Lombard period, in great part modernised. The way now lies over the Piano di S. Rocco; one road turns eastward, leading to Lanzo, and thence to Campione on the L. of Lugano. The way to Porlezza lies about due N., and soon reaches a point where the traveller commands a beautiful view over the head of that lake, and of the steep slopes leading down to it. The torrents have excavated ravines in the jurassic limestone that often make communication between adjoining villages a matter of some difficulty. Leaving on the l. the picturesque villages of Pellio Superiore and Pellio Inferiore, the road descends to *Laino*, and thence to *Osteno* on the shore of the lake. There is here a very singular cleft, cut by the torrent that drains the upper part of the valley, and called Orrido di Osteno. It is accessible from the side of the lake in a fisherman's skiff, and well deserves a visit. The steamers plying between Lugano and Porlezza call at Osteno, and it is intended to connect the last named villages by a new road. Near the lake shore are seen vast masses of tufa, formed by deposition from streams laden with carbonate of lime. In some places it has been largely quarried. A cave with stalactites attracts some visitors. If the traveller should have already seen the eastern end of the L. of Lugano, and should not be impatient to reach Lugano by the steamer, which of late years has started from Porlezza at 1.15 P.M., he may well take the road from S. Fedele to Lanzo, and thence to *Campione*. This place lies on the lake-shore SW. of the Monte Caprino, and nearly opposite Lugano, which is about 2½ m. distant, and is accessible by boat in 40 m. The village, with a small surrounding tract of land, belongs to Italy, and administratively forms part of Val Intelvi, though the shore on either side appertains to the Canton Tessin. Erratic blocks of crystalline rock are seen up to a very considerable height (2,000 ft.?) above the L. of Lugano. The largest assortment of these is at a place called Al Gaggio where they have been extensively used for building purposes.

Ascent of the Monte Generoso (5,561′). —The Monte Generoso, also known as Monte Calvaggione, is a mass of mountain overlooking the S. part of the L. of Lugano, sloping to the N. and NE. towards the Val Intelvi, and to SE. towards the Val Muggia. Till lately comparatively unknown, it is destined to increasing celebrity, as travellers discover its attractions, and find that provision has been made for their comfort. The position of the mountain, and to some extent its form, have provoked comparisons with the Rigi which are somewhat misleading, but none who have visited it in moderately favourable weather can fail to rank the view from the summit very high in the catalogue of alpine panoramas. Though it lies in the very centre of the lake

district of Lombardy, this mountain does not nearly equal the Rigi in the extent of water that washes its base, and forms such an admirable foreground to the more distant views. A considerable part of the L. of Lugano is visible from the Generoso, and the more distant lakes of Varese, Comabbio, and Monate are well within the range of view; but on the E. side there is a mere glimpse of the L. of Como, opposite the opening of Val Intelvi, and in the opposite direction but a slight and distant view of the Lago Maggiore. The alpine panorama, on the other hand, is, in the writer's opinion, decidedly superior. The Monte Rosa chain, though almost as distant as the Oberland peaks are from the Rigi, rises much more boldly, and presents a grander outline. The steep side of the mountain facing the L. of Lugano is bolder and more varied in form than its Swiss rival, and it offers far more objects of interest to the naturalist. Until very lately no contrast could be greater than that between the two mountains in all that regards the comfort or convenience of strangers.

A considerable change has been, however, recently made by the opening of a large hotel on the S. slope of the mountain above Mendrisio, built by Dr. Pasta, an enterprising inhabitant of that place. A large sum must have been expended in the building, not to speak of a new and convenient bridle-track, and a line of telegraph set up for the convenience of visitors. The reports of travellers who have made a prolonged stay at this hotel have been generally very favourable, but it is not yet widely known. The new hotel is rather far from the highest point of the mountain—about one hour and a quarter on foot or mule-back—but is perhaps on that account better fitted for those who meditate a prolonged stay.

The Monte Generoso is accessible with more or less ease in most directions, but there are four rtes. which deserve special mention. In future the most frequented will be the path from Mendrisio.

1. *By Casasco.* The village of Casasco lies on the S. side of Val Intelvi, about 1 hr. from Castiglione. It contains a village inn, where the traveller may probably lodge better than elsewhere on the N. or E. sides of the mountain. There is a horse-track, used by men who quarry limestone flags and coarse slate, leading close to the top of the mountain, and the ascent on this side is very easy, but decidedly longer than the other ways mentioned below. The upper ridges enclosing Val Intelvi have unfortunately been much denuded of wood, and the way lies in great part over bare mountain slopes, at first rather N. of W. About half-way the track passes a considerable group of châlets called Orimento, and then turns to the rt., ascending gently till it reaches a point where, for the first time, a view is gained of part of the Lake of Lugano. Thenceforward the track bears to the l., at first S., and finally SE., traversing in one place an extensive wood or thicket composed exclusively of *Cytisus alpinus*, here growing 18 or 20 ft. in height. The track follows a ridge from which the ground slopes in opposite directions till it finally reaches the rather steep rocky ridge forming the highest peak. The path lies on its W. side until very near the top, when the traveller can find his own way. The summit is formed of a succession of projecting points of rock, very steep on the W. side, where they show bare escarpments of slate, and sloping rapidly in the opposite direction. The highest is 5,561 ft. above the sea, little exceeding the adjoining teeth in the serrated ridge, and that circumstance somewhat injures the effect of the view. This is, however, of the highest interest, and the mountaineer's knowledge of the alpine chain is taxed to identify the many summits here seen from an unaccustomed point of view. Next in importance to the Monte Rosa range the Bernina Alps are the most conspicuous objects, and beside them, but nearer to the eye, is seen the fine peak of the Monte della Disgrazia, with the

snowy range extending thence towards Chiavenna. A portion of the Graian Alps is said to be visible, and in clear weather the Monte Viso should be in view, but of that peak the writer cannot speak. He was unable to identify the cathedral of Milan, and M. Weilenmann, who has recounted two ascents of this mountain in the first series of 'Berg- und Gletscher-Fahrten,' was not more successful. Among other interesting plants on the highest ridge are *Cineraria aurantiaca*, *Pæonia officinalis*, *Hieracium villosum*, &c. *Ligusticum Seguieri* has been gathered elsewhere on the ridge. There are many fossils in the jurassic limestone near the summit. Starting considerably before daylight, and going at a very moderate pace, the writer employed fully 4 hrs. to reach the summit from Casasco. A more direct way might be taken, but involving an extra descent and ascent of about 1,400 ft., as it would be necessary to cross the head of Val Muggia.

2. *By Mendrisio.* The E. side of the Monte Generoso overlooks the head of Val Muggia, whose torrent flows about due S., till after approaching near to Mendrisio and Balerna, on the road from Lugano to Como (Rte. C), the stream turns to the E. and falls into the L. of Como near Cernobbio. A traveller whose sole object is to reach the summit of the mountain may go by the old track, passing by Muggio and Scudelatte, but the great majority will choose the track leading to Dr. Pasta's new hotel. This passes by the hamlet of Salorino, and the solitary traveller will be guided by the telegraph poles which lead to the house. The path goes partly amidst chestnut, and higher up passes through a beech wood. Above the hotel the way is rather steeper and offers little or no shade, so it is well to choose the early morning or the late afternoon for the walk.

3. *By Rovio.* As already mentioned, the Monte Generoso shows its boldest front to the L. of Lugano, and the ascent on that side is much steeper. The highest village, about 1 hr. from Maroggia, or 1½ hr. from Bissone, is called *Rovio.* The accommodation there is of the poorest description, and it would probably be a better plan to seek accommodation at either of the villages just named, and start at an earlier hour in the morning. In the writer's opinion, it is a preferable pla to make the descent by this side, with the Monte Rosa and a part of the chain of the Pennine Alps in view during the first half of the way down to the L. of Lugano. There are several rough tracks that mount the steep W. face of the mountain, but most of these have been made by the men who extract rough slates from the upper ridge. There are no regular quarries, and the men who follow this trade attack the face of the cliffs, now at one point, now at another, every now and then detaching masses of rock that are left to find their own way to the bottom. There is therefore some positive risk to a stranger attempting to climb this face of the mountain, and it is expedient to take a local guide whether for the ascent or descent.

4. *By Melano.* Melano is a village lying a little farther S. than Rovio, and the way thence may be recommended to persons approaching the mountain from the side of Lugano who wish for an easier ascent than that from Rovio, and would keep clear of the risk of falling rocks.

Route I.

LAVENO TO COMO, BY VARESE.

13½ m. to Varese; 15 m. thence to Como.

This road skirts the base of the mountain range described in the preceding Rtes., and is scarcely within the scope of this work; but it lies through very beautiful scenery, and is of peculiar interest to geologists, not only on account of the relations of the stratified rocks (which have been much discussed by Lombard geologists), but also for the extensive remains of former glacial action seen throughout a great part of the space between the Lago Maggiore and that of Como. The low hills enclosing the Lakes of Varese, Comabbio, and Monate appear to be in great part, if not exclusively, moraines, deposited by the great glacier of the Tessin that once occupied the bed of the Lago Maggiore; and the above-named shallow lakes are apparently due to the ancient moraines, which retain the streams that would otherwise find their way directly to the Tessin or the Po.

Laveno (Inns: Posta, pretty good; Moro) is noticed in § 32, Rte. A. It lies at the base of the *Sasso di Ferro* (3,556′), which commands a noble view over the greater part of the Lago Maggiore, but limited to the NE. by the slightly higher summit of the *Monte Nudo* (3,635′). The road from Laveno ascends about 3 m. through the wooded valley of the Boesio, and then turns SSE., leaving to the l. branch a road leading through very pleasant scenery to Ponte Tresa (Rte. G), on the way from Luino to Lugano. The latter town is by this road about 22 m. from Laveno.

The road to Varese traverses a still more beautiful country, and in about 7 m. reaches *Gavirate*, on the NW. shore of the Lake of Varese. This is a fine sheet of water, 5½ m. long and 2 m. in breadth, 842 ft. above the sea, or 196 ft. above the level of the Lago Maggiore. It is very shallow, nowhere exceeding 85 ft. in depth. Its shores are encompassed by gently sloping and richly cultivated hills, on which stand many fine villas, while to the N. rises the bolder ridge of the *Monte Campo dei Fiori* (4,085′). This mountain commands one of the finest views in the neighbourhood, and is said to be particularly interesting to the geologist as giving the best general survey of the district which has been the seat of the intrusion of the porphyries and other igneous rocks in the neighbourhood of Lugano. In 1863 an important discovery was made in the Lake of Varese, when the distinguished geologists MM. Desor and Stoppani found here the remains of ancient lake-dwellings, with flint weapons, &c., similar to those of the Swiss lakes which have excited so much interest of late years. A fisherman named Giuseppe Molinari, of Bardello, near Gavirate, who accompanied the first explorers, is ready to take other visitors to the spots, six in number, where the piles and other objects were found by them. The best prospect of successful exploration is at a season when the waters are low.

The road from Gavirate mounts over the hills on the N. side of the lake. At Luinate it commands a beautiful view, extending to the smaller lakes of Comabbio and Monate, and soon after descends to *Varese* (Inns: Stella; Angelo: neither is well spoken of), a handsome country town, the centre of a district where many of the wealthy Milanese have villas to which they resort in summer and autumn. There is not much to interest sight-seers in the town, and the main object of curiosity is the Sacro Monte, also called *La Madonna del Monte*. This stands on a hill NW. of the town, 2,845 ft. above the sea. Light carriages ply to Robarello, about 2½ m. from Varese, and in that village ponies—charge 1½ fr.—or *portantini*—charge 4 fr.—may be engaged for the ascent. Those who have not seen the Sacro Monte of Varallo may very well visit this sanctuary, though the works of art here are less interesting; the view is

admirable, but less extensive than from the Monte Campo dei Fiori. There are several Inns near the sanctuary for the accommodation of pilgrims and visitors.

The road from Varese to Como is rather hilly, but passes through a fine country. In approaching the latter town the road passes close to the rly. station at Camerlata, so that travellers bound for Milan do not enter Como.

Route K.

BELLAGGIO TO ERBA, BY VAL ASSINA.

5½ leagues = 16½ Eng. miles.

In the preceding Rtes. the district between the Lake of Como and the Lago Maggiore has been pretty fully described, but no notice has been taken of the triangular space enclosed between the two southern branches of the L. of Como. The mountains here are of moderate elevation, but one of them—the Monte San Primo (5,236′)—exceeding 5,000 ft. in height; but the district abounds in beautiful scenery, and the higher points command views either of the severe and silent L. of Lecco, or the animated and smiling shores of the Como branch of the lake. The S. slopes of these mountains that sink in undulating hills into the plain of Lombardy form the district of *Brianza*, conspicuous even in this fertile region for its abundant produce of silk, as well as the ordinary crops of the country. It is thickly set with villas and picturesquely-situated villages, and no district gives a fuller idea of the wealth that has been poured by the hand of Nature on this garden of Europe.

A pretty good road leads from Bellaggio through the mountain district between the two lakes. One of the most enjoyable excursions for persons remaining at that place is to follow that road, on foot or in a carriage, and then descend to Onno on the L. of Lecco, returning thence to Bellaggio by boat. The ascent from Bellaggio is most interesting, commanding, at intervals, charming views of the lake. After passing the village of Civenna the traveller unexpectedly reaches the summit level, and soon begins to descend towards the S. He may visit near *Magreglio* a small cave with an ebbing and flowing spring, remarkable for the short interval between its pulsations. The waters increase for 3 min., and subside again during the succeeding 5 min. This spring is regarded as the source of the *Lambro*, a stream flowing southward towards the plain of Lombardy. So long as it remains enclosed between the higher mountains, the valley is called *Val Assina*. It is supposed that this was chosen as a retreat by the Celtic tribes who occupied the lower country before the Romans established themselves there; and many of the names of places are traced to a Celtic origin. To a later period belong the castles, now in ruins, erected for defence against the successive invasions of barbarians from the North. From a point named Ghisallo, above Magreglio, nearly the whole length of the lake from Domaso to the bridge at Lecco is seen at once. Near Barni, the next village, is a beech tree of extraordinary dimensions, supposed to be of vast antiquity. The upper part of Val Assina is wild and almost alpine in character. The Lambro flows between steep rocks, and in two places is lost to view between the huge masses that have fallen together, leaving between them a passage for the stream. About 10 m. from Bellaggio is

Asso, a charmingly-situated village with a country Inn, which is (or was) nicely kept. The late King of Saxony and other botanists have made it their head-quarters while exploring the

floral wealth of the neighbourhood. The *Corno di Canzo* (4,508′) is especially interesting for its rare plants, which include a large number, but not all, of the species of the Grigna and Campione, enumerated in § 38, Rte. E. While those summits are somewhat difficult of access, and involve a long and fatiguing day's walk, the Corno di Canzo is comparatively easy of access from this side, but at least two days should be given for its thorough exploration. The summit commands an admirable view. A path leads NE. from Asso to Valbrona, and amidst exquisite scenery descends to the margin of the Lecco branch of the lake. To reach Onno it is necessary to bear to the l. in descending. Another path mounts WNW. from Asso to the Piano di Tivano, a plateau 3,800 ft. above the sea-level, whence there is a steep path to Nesso or Careno (Rte. A). A traveller sleeping at Asso might make a delightful excursion, taking the plateau on his way to the summit of the *Monte San Primo* (5,236′), and descending thence to Bellaggio. A slight ascent of ¾ m. leads from Asso to

Canzo, now the principal place in the valley. There are many villas close at hand, and in the autumn a theatre and several cafés are the rendezvous of the gay society of the neighbourhood. The pedestrian may take a path by Ponte, chiefly along the banks of the Lambro, and by a détour visit the Buca del Piombo (Rte. L), on his way to Erba. The post-road keeps about due S., passing the little narrow *Lago di Segrino*, and then issues from a rocky defile into the rich and luxuriant scenery of the Brianza, and joins the high road from Como to Lecco (Rte. L) about ¾ m. E. of *Erba*.

Route L.

COMO TO LECCO, BY ERBA.

About 18 m. post-road.

Of the many charming excursions that may be made through the hilly region at the S. base of the Alpine chain, it would be hard to name any more agreeable than this. Since the opening of the rly. from Lecco to Bergamo, it involves little or no loss of time for travellers going eastward from the L. of Como, and not desiring to enter Milan at the season when the heat in that city is oppressive. The diligence takes 3 hrs. between Como and Lecco, but most travellers will prefer to hire a vehicle. The road from Como mounts ESE., first on the rt., then on the l. bank of a torrent that makes half the circuit of the city. Looking back during the ascent are some charming points of view, but before long the road lies altogether amidst the wooded or richly cultivated hills of the Brianza. The district is remarkable for the numerous small lakes that lie in depressions amidst the hills. Those of *Montorfano* and *Alserio* lie to the rt. of, and at some distance from, the road. After passing Villa Albese the road reaches the summit of a low ridge, and suddenly gains an exquisite view over the plateau called *Piano d'Erba*, with the lakes of Alserio, Pusiano, and Annone, backed by the fine ridge of the Resegone, and the nearer mountains of Canzo. A slight descent leads in 2 m. to

Erba, the chief place of the *Brianza* district, with a fair Inn. The form of the plain surrounding this little town, and the existence of peat in the neighbourhood of the existing lakes, has led to the belief that the whole tract occupies the site of a partially filled up lake, mentioned by Pliny under the name Eupili. This opinion seems to require more evidence than has yet been produced in its behalf. The chief object of interest to strangers near Erba is the *Buca del Piombo*, a remarkable cavern

on the slope of the mountain, about 3 m. N. of the town. It is of unusually large dimensions, and the first portion is so straight and lofty that the daylight is still sensible at 600 ft. from the entrance. This is guarded by four thick walls, one within the other, showing that at some early period the place was used for a place of refuge or defence. In the interior of the cave are some deep holes filled with water.

The road from Erba to Lecco passes close to *Incino*, which is shown by coins and inscriptions found there to occupy the site of Forum Licinii, a place which, at a still earlier period, according to Pliny, was one of the chief towns of the Celtic Orobii, the other two towns of the tribe being Como and Bergamo. After meeting the road from Bellaggio, described in the last Rte., and crossing the Lambro, the road reaches the shore of the *Lago di Pusiano*, a lake $2\frac{1}{2}$ m. long and 1 m. broad, with a pretty island planted with cypresses. About 2 m. farther, but at a lower level, is the *Lago d'Annone*, rather larger than the Lake of Pusiano, but nearly divided into two by a projecting tongue of land. The road follows the course of a little stream by which the lake drains itself into the Lake of Como near Lecco, and reaches the shore at *Malgrate*, nearly opposite Lecco (Rte. B). Very near the road is a place called Azzarola, where large numbers of fossils belonging to the so-called *infra-lias* have been found by M. Stoppani.

CHAPTER X.

RHÆTIAN ALPS.

Section 34.

PRÆTTIGAU DISTRICT.

Route A — Bregenz to Landeck, by Feldkirch and the Arlberg Pass 350
Route B — Bludenz to Landeck, by Montafun and the Paznaunthal . 352
Route C — Feldkirch to Maienfeld . . 354
Route D — Maienfeld to Süs, by the Prættigau and the Vereina Pass 355
Route E — Glacier Passes from Klosters to Lavin, or Guarda—Ascent of Piz Linard . . . 358
Route F — Passes from the Valley of the Ill to the Prættigau . . 360
Route G — Pattenen in Montafun to Guarda, by the Fermunt Pass 362
Route H — Passes from the Paznaunthal to the Engadine . . . 362

Section 35.

ALBULA DISTRICT.

Route A — Coire to Samaden, by the Julier Pass 365
Route B — Thusis to Tiefenkasten . . 369
Route C — Coire to Samaden, by the Albula Pass 370
Route D — Lenz to Klosters, by Davos . 372
Route E — Coire to Davos am Platz, by the Strela Pass . . . 373
Route F — Davos am Platz to Süs, by the Fluela Pass 375
Route G — Davos am Platz to Scanfs, by the Scaletta Pass — Ascent of the Schwarzhorn . . 376
Route H — Davos am Platz to Scanfs, by the Sertig Pass . . . 378
Route I — Bivio to Casaccia, by the Septimer Pass . . . 378
Route K — Andeer to Casaccia, by the Aversthal 379
Route L — Andeer to Chiavenna, by the Aversthal 382
Route M — Andeer to Campo Dolcino, by the Aversthal . . . 383

Section 36.

BERNINA DISTRICT.

Route A — Chiavenna to Nauders, by the Val Bregaglia and Engadine 385
Route B — Samaden to Pontresina—Excursions from Pontresina . 393
Route C — Bevers to St. Moritz, by Val Bever 398
Route D — Tour of the Bernina—Sella Pass 398
Route E — Colico to Bormio, by the Val Tellina 400
Route F — Morbegno to the Val Bregaglia, by Val Masino—Ascent of Monte della Disgrazia . 405
Route G — Casaccia to Sondrio, by the Muretto Pass . . . 409
Route H — Pontresina to Chiesa in Val Malenco, by the Capütschin and Scerscen Passes . 409
Route I — Chiesa to Poschiavo, by the Passo di Canciano . . 411
Route K — Samaden to Tirano, by the Bernina Pass . . . 412
Route L — Pontresina to Bormio . . 415
Route M — Bormio to the Engadine, by Val Livigno 417

Section 37.

ORTERLER DISTRICT.

Route A — Bormio to Mals—Pass of the Stelvio—Ascent of the Orteler Spitze 421
Route B — Bormio to Trento, by Val Furva and Val di Sole . 425
Route C — Santa Catarina to Latsch, by the Passo Cevedale . . 430
Route D — Glacier Passes from Sta. Catarina to Prad 432
Route E — Laas to Sulden, by the Laaserthal 434
Route F — Malè to Trafoi, by the Suldenthal 435
Route G — Rabbi to Meran, by the Ultenthal 438
Route H — Malè to St. Pankraz in the Ulthenthal 440
Route I — Cles to Meran or Botzen . 441
Route K — Bormio to Santa Maria . . 442
Route L — Zernetz to Mals, by the Ofen Pass and Val Mustair . . 444
Route M — Schuls to Mals, by Val Scarla . 445
Route N — Remüs to Mals, by Val d'Uina 446

The main divisions of the Alps were in early times established in a vague and general manner, no need being felt for fixing accurate limits between them, and the knowledge of their topography being too limited to enable

geographers to do so. Modern writers, in attempting to define such limits, have not been guided by the same criteria, and have consequently arrived at different results. In the present work, the effort has been made to base a general arrangement mainly upon the natural relations of the mountain groups and the principal valleys, the author being well aware that such an arrangement cannot always be brought into accordance with those suggested to other writers by ancient or modern political boundaries, or by the ethnographic relations of the population, or by purely geological considerations.

The most remarkable feature in the general orography of the Alps is the great breach in the continuity of the chain which is marked by the valley of the Adige. A traveller following that river from Verona to Botzen, where its eastern branch—the Eisack—joins the main stream, and then mounting gradually along the latter, arrives at a chain of small lakes forming the natural source of the river, the highest and most northerly of which is less than 5 m. from the main channel of the Inn. From the same plateau, and separated by no perceptible height of land, a stream descends to the Inn, at the point where that river enters the defile of Finstermünz. It is a singular fact, that the Eisack, or eastern branch of the Adige, should be connected with the valley of the Inn by another depression, a few feet deeper than that of the lakes of the Adige, giving passage to the Brenner road. Everywhere else in the circuit extending from the Mediterranean to the Adriatic, the Italian peninsula is girdled by one or more alpine ranges, and is accessible only by passes that oppose a more or less serious barrier to free communication; but, as has been seen, the main valley of the Tyrol commands access to the S. side of the Alps by two passages that may best be described as breaks in the continuity of the alpine chain.

This is not the place to point out the vast results that have ensued from this peculiarity in the form of the Alps. It is not too much to say, that the destinies of all Europe, and of Italy in particular, have been for the last 1,500 years, and are still at the present time, profoundly influenced by the conditions here pointed out.

Although the Brenner (4,588′) be somewhat the lower of the two openings between the Inn and the Adige, it has more the character of a pass than that connecting the main branch of the Adige with the Inn, which is 4,596 ft. above the sea. This must be considered the natural limit towards the E. of the Rhætian Alps, and it seems impossible to follow the example of those geographers who include under that designation the Œtzthal Alps and Stubayer Ferner, lying between the sources of the Adige and the Eisack. Neither does it appear desirable to include as a portion of the Rhætian chain the ranges S. of the Adda and the Tonale Pass, described in the next chapter under the designation of Lombard Alps. These are separated for exactly the same reasons that determine the distinction generally admitted between the Graian and the Pennine Alps, or that between the Cottian chain and the Alps of Dauphiné.

Restricted to their natural orographic limits, the Rhætian Alps to be described in the present chapter, are bounded on the W. by the valley of the Rhine and the Splügen road from Feldkirch to Colico; to the S. by the Val Tellina, the road of the Tonale, and the valleys of Sole and Non, from Colico to San Michele near Trent; to the E. by the Adige from San Michele to its source, and then by the Finstermünz road along the Inn to Landeck; and finally the northern limit is marked by the road of the Vorarlberg from Landeck to Feldkirch. Thus limited, the Rhætian Alps evidently belong to the same great system as the Pennine and Bernese chains. They are traversed by a great valley, nearly parallel to those of the Rhone and Vorder Rhein, through

which the Mera descends to Chiavenna; and the far greater stream of the Inn, the principal source of the Danube, flows in a nearly direct course from the Maloya Pass to Prutz in the Tyrol. On the N. side of this main valley a continuous range extends from the Pizzo Stella above Chiavenna to the Schönjöchlberg by Prutz. On the S. side of the main valley lie two considerable groups that include the highest peaks of the Rhætian Alps, but do not form a well-defined chain. Of these the best known to English travellers is the group of the Bernina Alps (§ 36), which has of late attracted many visitors. The Orteler group, still more attractive in the writer's opinion, though now pretty fully explored, was almost unknown a few years ago; and the ranges N. of the Engadine have been, until very lately, completely neglected by our countrymen. One reason that has withheld travellers from many of the districts here referred to, is the fact that they are divided between different States. With the important exception of the Engadine, all the valleys running eastward from these Alps belong to Austria, to which state also appertains the valley of the Ill, opening into the Rhine valley at Feldkirch. The Adda and its tributaries, with the exception of the Swiss valley of Poschiavo, has been united since 1859 to the kingdom of Italy. The remainder of the territory here defined, saving the petty principality of Lichtenstein, and other still more trifling exceptions, forms part of the Canton Grisons. The languages spoken within these limits are German, Romantsch, and Italian; but as a general rule, a stranger may always find some one able to speak either German or Italian.

SECTION 34.

PRÆTTIGAU DISTRICT.

As stated in the introduction to this chapter, the main valley of the Rhætian Alps is guarded on the N. side by a continuous range, extending from the neighbourhood of Chiavenna to that of Landeck in the Tyrol, a distance rather exceeding 80 m. in a direct line. From this range, most of whose summits lie between 10,000 and 11,000 ft., a considerable secondary ridge extends at right angles, nearly 40 m. towards the NW., forming the frontier between the Austrian province of Vorarlberg and the Grisons valley of Prættigau. The NW. extremity of the secondary ridge above mentioned is known as the *Rhætikon*. The group of peaks passing under this collective name culminates in the Scesa Plana (9,738′). The higher group, lying at the junction of the NW. range with the main range extending NE. into the Tyrol, is distinguished as that of the Fermunt, or *Silvretta Alps*. The most natural division of the great mass of alps lying between the Inn, the Rhine, and the Vorarlberg, is that marked by the Prættigau valley and the Vereina Pass connecting it with Süs in the Engadine. It is the portion lying N. and E. of that boundary that is included in the present section under the name Prættigau District. Few portions of the Alps are less known to strangers, and the writer is forced to confess his want of personal acquaintance with it. The name chosen to distinguish it is not perhaps very appropriate, but has been selected as that least strange to English readers. The highest summit of this district is the Piz Linard (11,208′), which, as well as the Muttler and several others of this group, has been ascended by that indefatigable mountaineer, M. Weilenmann; and in the last few years, members of the Swiss Alpine Club have done much to complete its exploration.

The road of the Vorarlberg, forming the boundary between the Rhætian and the Bavarian Alps, is described in this section, but it has appeared to be more convenient to include the description of the entire Engadine, or Upper Valley of the Inn, in § 36, although a portion of that valley forms the S. boundary of the district here described.

A mountaineer intending to enter the Austrian territory will be careful to have his passport in due order; but as a general rule English travellers have no reason to complain of needless annoyance from Austrian officials.

Route A.

BREGENZ TO LANDECK, BY FELDKIRCH AND THE ARLBERG PASS.

	Austrian miles	Eng. miles
Hohenembs	2½	11¾
Feldkirch	2	9½
Nenzing	1½	7
Bludenz	1½	7
Dalaas	2	9½
Stuben	2	9½
St. Anton	2	9½
Fliersch	2	9½
Landeck	2	9½
	17½	82¾

The road here described lies altogether in Austrian territory. It affords a very direct and convenient route for persons going from England into the Tyrol; but it very rarely happens that any traveller turns aside from the high road to explore the fine glacier scenery that is within easy reach of the lateral valleys of Montafun and Paznaun, lying S. of the main road. There is regular diligence communication between Bregenz and Innsbruck, and this may be used by travellers about to visit the E. of Switzerland, and intending afterwards to enter Austria or Bavaria, who may pass their heavy luggage at Bregenz, and then forward it to Innsbruck, instead of incurring the expense and annoyance of carrying it with them over Alpine passes.

Bregenz (Inns: Œsterreichischer Hof, good; Goldener Adler, or Post: Schwarzer Adler; Krone) is a prettily situated little town at the E. end of the Lake of Constance, more fully noticed in § 41. The road to Feldkirch has been little frequented by strangers since the opening of the railway from Rorschach to Coire, as Feldkirch may be reached from several of the stations on that line, and there is a post carriage daily from the Haag station (§ 28). A traveller finding himself in Bregenz will not, however, save time by the détour to Rorschach, and will do better to follow the post road by Hohenembs to

Feldkirch (Inns: Post; Engel Gabriel, good), 1,462 ft. above the sea. Here the *Ill* descends from ESE. to join the Rhine through a broad valley whose lower and more level portion, about 15 m. in length, is called *Wallgau*. Above Bludenz it divides into two branches, of which the S. branch, called Montafun, running parallel to the Rhætikon range, is described in Rte. B; the other branch, or Klosterthal, is followed by the high road to Landeck. This being the only direct carriage road from N. Switzerland into the Tyrol, is a channel of considerable commercial intercourse. The people along the main road, from frequent intercourse with their neighbours, have lost much of the characteristic simplicity of the population of the German Alps, and have acquired something of the hard, business-like tone of the Swiss.

The high road is carried for a considerable distance along the l. bank of the Ill. At *Frastenz*, about 2 m. from Feldkirch, it passes the opening of the *Samina Thal*, a narrow glen running parallel to the Rhine. The pedestrian bound for Mayenfeld may avoid the hot valley of the Rhine by taking that glen, on his way from Feldkirch; or he may reach the lower part of the Prættigau at Seewis, above Grüsch. See Rte. F. With the latter object in

view, it is probably a better plan to follow the road through the Wallgau to *Nenzing*, on the torrent issuing from the *Gamperthonthal*, through which a little-used path leads directly to Seewis. The *Fundelhorn* (7,871′), rising on the E. side of the last-mentioned valley, is conspicuous from the high road. On the N. side of the Ill is seen the opening of a considerable lateral valley, called *Walserthal*, through which a path leads to the head of the Bregenzer Ach (§ 41).

Before reaching *Nüziders*, the road crosses to the rt. bank of the Ill, and gains a view of the higher peaks of the Rhætikon, with the extensive snowfields of the Brandner Ferner. About 2 m. from the bridge is the little town and post station of

Bludenz (Inns: Post; Kreuz), finely situated at 1,758 ft., close to the head of the Wallgau, where this is formed by the junction of the Montafun valley (Rte. B) with the Klosterthal. There is a fine view from the church, and better still from the castle of Sternbach above the town. [The mountaineer should make the ascent of the *Scesa Plana* (9,738′)—usually called on this side Wetterspitze—the highest summit of the Rhætikon Alps. Anton Neier and Ferd. Heine are named as guides—pay 6 fl. or 10 fl. descending to Seewis (Rte. F). The way lies through the *Brandnerthal*, on the W. side of the *Alvier* torrent which drains that valley. The highest hamlet, named Brand, is attained in 3 hrs. from Bludenz. The way then lies on the opposite side of the valley, about due S., to a fine lake called *Lüner See* (4,988′), surrounded by precipitous crags. Above it a comfortable hut opened by the German Alpine Club affords night-quarters to travellers. The ascent of the peak involves a steep scramble over rocks, and the passage of some crevassed glacier. The view must be very extensive.]

The road to Landeck mounts nearly due E. from near Bludenz, through the *Klosterthal*, a narrow and wild glen running parallel to the line of junction between the Jura limestone and the trias.

The first post-station is *Dalaas*, with a good inn at the Post. The next is *Stuben* (Inn: Post), the highest village (4,324′), E. of which rises the ridge of the Arlberg Pass leading to Landeck, and forming the boundary between Tyrol and the province which, from the name of its frontier ridge, has derived the name *Vorarlberg*. The pass lies between the *Kalteberg* (9,505′) to SW., and the *Schindler Spitze* to NE. The road is one of the most ancient of alpine highways, having been made under the Emperor Joseph II. in 1787; but it has since been in great part reconstructed. The crest of the *Arlberg Pass* (5.902′) is reached in little more than 1 hr. from Stuben. A short way below the summit on the Tyrol side are the Inn and Church of *St. Cristoph*, originally established in the fourteenth century as a refuge for travellers, below which the road descends into the *Stanzerthal*, watered by a stream named *Rosanna*, whose principal source is in the Ferwallthal, a glen communicating by high passes on the one hand with Montafun, on the other with the Paznaunthal. The road descends rather rapidly to the post station at *St. Anton* (Inn: Post, tolerable), and thenceforward keeps to the l. bank of the Rosanna. Several villages are passed, including the post station of *Flierseh* (3,770′). A few miles lower down is the junction of the Rosanna with the Trisanna, issuing from the Paznaunthal, overlooked by the picturesque castle of Wiesbergen. The scenery becomes softer, and the climate sensibly hotter, as the road approaches the valley of the Inn, which is entered at

Landeck (Inns: Schwarzer Adler; Post, not bad, but foul smells; Goldener Adler), picturesquely situated on the rt. bank of the Inn, at 2,640 ft. above the sea. One main road follows the river to Innsbruck, while another mounts along the stream to the defile of Finstermünz, and leads either to the

Engadine (§ 36), or to the valley of the Adige (§ 48). For further information as to the neighbourhood of Landeck, see Alpine Guide, Part III.

Route B.

BLUDENZ TO LANDECK, BY MONTAFUN AND THE PAZNAUNTHAL.

	Hrs.' walking	English miles
Schruns	3	9
St. Gallenkirch	2	6
Pattenen	3½	10½
Galthür	5	12½
Ischgl	3	8
Kappel	2	6
Landeck	4	12
	22½	64

There is a rough char-road from Bludenz to Schruns; the remainder of the way is practicable on horseback.

The pedestrian going from Feldkirch to Landeck may choose a course in every way more interesting, and but little longer than the high road described in the last Rte., by following the main branch of the Ill through the highland valley called *Montafun*, and descending into the Tyrol by the Paznaunthal. Besides the attractions of fine scenery in both valleys, the stranger will be interested by the primitive manners and costume of the people, though the severity of the climate and the small resources of the soil drive many of the young men to wander abroad in search of a livelihood, with the hope of returning in after-life to their native valleys. The entrance to Montafun is through a very grand rocky defile opening near the ancient convent of St. Peter, about 2 m. from Bludenz. At 1½ hr. from that town is the hamlet and church of St. Anton, standing on or near the site of a large village or town traditionally reported to have been overwhelmed by a bergfall. At *Vadans*, ½ hr. farther, is the opening of the *Rellsthal*. Through that glen is an easier and shorter way to the Lüner See and the Scesa Plana than that from Bludenz, but very few strangers have approached the mountain from this side. For the Schweizerthor see Rte. F. A green and level reach of the valley, about 3 m. in length, leads to

Schruns (Inn: Traube, very fair, the best on this route: Löwe), 2,084 ft. above the sea. Here the *Silberthal*, also called Litzthal, opens to the E., penetrating deeply into the mountain ranges that separate the Klosterthal from Montafun. On the opposite side of the Ill, the *Gauerthal*, more interesting to mountaineers, leads SW. to the Drusenthor (Rte. F); and a few hundred yards farther E. the Gampadel Tobel gives a passage to another torrent descending from the Rhætikon range, and leading to two passes into the Prættigau.

The middle portion of the Montafun is remarkable for the extensive cultivation of cherries, and large quantities of kirschwasser are made here. A walk of 2 hrs., chiefly along the l. bank of the Ill, leads from Schruns to *St. Gallenkirch* (2,394′), opposite the opening of the Gargellenthal, leading by two rough passes to the Prættigau (Rte. F). Near the village a stream descending from NW. makes a fine cascade. The scenery of the head of the valley is very fine. Green meadows and orchards are enclosed between high and bold mountains, and from time to time the traveller gains glimpses of the great glaciers of the Silvretta Alps. At *Gaschurn* (‘2,769′, Schmidt’—probably higher), the Gannerathal opens due S., and leads to Klosters by the Garneira Joch (Rte. F). The last village, about 1 hr. above Gaschurn, is *Pattenen* (3,204′?). This is the proper head of the Montafun valley, which has kept a direct upward course to SE. from Bludenz. Several torrents join their waters above the village: the most considerable of these, being fed by the extensive glaciers on the N. side of the Silvretta group, flows due N. through the *Fermuntthal*. If tolerable accommodation is to be had

there, Pattenen would be desirable head-quarters for a mountaineer. The *Gross Litzner* (10,250′), and many nameless peaks of equal or greater height, might probably be reached without much difficulty.

The shortest way from Pattenen to the Paznaunthal is by the *Zeyneser Joch* (6,162′). a pass lying immediately E. of the village; but there is a far more interesting way, a good deal longer, but rather less steep, following the Fermuntthal. The path lies along the rt. bank of the torrent, ascending a little W. of S. for more than 1 hr., till it turns nearly due E. opposite the junction of the *Cromerthal*, a short glen closed at its S. end by the peaks of the Gross Litzner and Klein Litzner. After following an easterly course along the rt. bank of the main torrent for nearly 1 hr., the traveller reaches the base of the low ridge of the Bielerhöhe, forming the watershed between the Ill flowing to the Rhine, and the Trisanna which drains the Paznaunthal into the Inn. To his rt. is a great amphitheatre of snowy peaks, divided into two portions by a ridge projecting northward towards the spectator, and dividing the head of the Fermuntthal into two wild alpine glens. The SW. branch—called Klosterthal—leads by a difficult glacier pass to the head of the Sardascathal (Rte. D), while the SE. branch, or Ochsenthal, is the way to the Fermunt Pass (Rte. G).

From the summit of the *Bieler Joch* the traveller overlooks an upland glen that falls NNE. into the head of the Paznaunthal. This is sometimes called *Klein Fermuntthal*. to distinguish it from that drained by the principal source of the Ill, but seems to be also known as Bielerthal. The orthography of the names throughout this district is very uncertain and confused. It is rather remarkable that in the Swiss Federal Map the same name should be written, in three places, Fermont, Fermund, and Vermund. Keeping to the l. bank of the Klein Fermuntthal, and passing the Fermunt See, the traveller reaches in 1½ hr. from the pass the hamlet of Wirl at the head of the *Paznaunthal*. Here he joins the track from Pattenen by the Zeyneser Joch, and another leading from the Ferwallthal (Rte. A). In ½ hr. from Wirl he reaches *Galthür* (5,369′), the highest Tyrolese village. standing at the junction of the *Jamthal* (see Rte. H), said to be the wildest and most savage of the valleys of this district. The inn at Galthür is very rough. The *Paznaunthal* descends in a very direct course to ENE. from Wirl to its junction with the Inn, about 5 m. from Landeck. On the N. side it is bounded by a ridge unbroken by lateral valleys, but from the S. it receives a succession of torrents chiefly fed by the glaciers of the high range which divides it from the Inn, issuing from as many wild glens, which supply scanty pasturage to sheep or horned cattle. Being much higher than the Montafun valley, the climate is here more severe, and the population very limited. Franz Pöll, a good mountaineer, who accompanied M. Weilenmann in several expeditions, lives at Mathon, 1 hr. below Galthür, near the opening of the *Lareinthal*, a narrow and savage glen closed at its S. end by the extremely bold peak of the *Fluchthorn* (11,142′). It has been climbed, but not without considerable difficulty, by M. Weilenmann with Pöll. The track keeps along the l. bank of the Trisanna, and after passing *Paznaun* reaches *Ischgl* (4,647′), the chief village of the valley, at the opening of the *Fimberthal* (Rte. H), the most considerable of the lateral valleys of this part of the range. A rough char-road leads from Ischgl down the main valley. About 5 m. farther on, between Sinsen and Kappel, is the opening of the much shorter *Vignitsthal*, on the E. side of the *Vesulspitz* (10,154′). See Rte. H. The hamlet of Mies lies at the junction of the *Gribellethal* with the main valley. At the head of this is the Gribellekopf (9,508), overlooking the head of the Samnaunthal, belonging, all but a part of the l.

bank, to Switzerland, and being the extreme E. point of the territory of the Confederation. A high and steep ridge, belonging on both sides to Tyrol, extends ENE. from the Gribellekopf to the neighbourhood of Landeek, a distanee of 14 m. There is a traek along either bank of the Trisanna by which the traveller may reaeh the junetion of that torrent with the Rosanna (Rte. A) a short way above Pians, whenee he descends by the high road to Landeck.

Route C.

FELDKIRCH TO MAIENFELD

	Swiss leagues	Eng. miles
Vaduz . . .	3	9
Balzers . . .	1¾	5¼
Maienfeld . . .	1½	4½
	6¼	18¾

Sinee the opening of the railway from Rorsehaeh to Coire, the road along the rt. bank of the Rhine is not mueh frequented, but the portion here described, lying at the W. base of the Rhætikon range, is an agreeable drive, and derives a little interest from the faet that it lies in great part through the principality of *Lichtenstein*, the smallest sovereignty in Europe, preserved by its insignifieanee amid the many ehanges that have affeeted more important States. A diligenee plies daily between Bregenz and Maienfeld, aeeomplishing the whole distanee—40 m.—in 8 hrs.

Soon after erossing the bridge over the Ill, on the S. side of Feldkirch, the road leaves Austrian territory, and enters that of Liehtenstein. The scenery is pleasing, though not remarkable. On the opposite bank of the Rhine is seen the opening of the rather deep valley of Toggenburg, that separates the range of the Sentis from that of the Churfirsten (§ 28, Rte. G). About 7½ m. from the Austrian frontier is

Vaduz, a small village with a country Inn, but the capital of the principality. The sovereign visits his aneestral eastle, standing on steep ground above the village, at rather long intervals, preferring his large possessions in Austria, and his high position at the eourt of Vienna, to the honour of an independent but solitary existenee at his mountain eapital. The revenue of the State is estimated at a little over £5,000 a year, and it is bound to furnish sixty-four men to the army of the Germanie Confederation. The road running S. from Vaduz leaves on the l. the village of Triesen, and in abou' 5 m. reaches Balzers, with a better Inn (Post) than that at Vaduz. *Gentiana pneunomanthe* and some other interesting plants are common in the low meadows in this part of the valley. There is a ferry over the Rhine, about 1 m. from the village, eonvenient for those wishing to reaeh Sargans and the L. of Wallenstadt. Immediately S. of Balzers is a eolumn marking the boundary between Liehtenstein and the Canton Grisons. Half a mile farther a path turns off to the l. and mounts towards the *Falkniss* (8,338′), a summit conspieuous in all the views of this part of the Rhine valley. It is not diffieult of access and commands a very extensive panorama. The high road here lies at some distance from the Rhine, passing through the defile of Luziensteig, between the lower esearpments of the Falkniss and the *Fläscherberg* (3.104). This has always been deemed of great importance as a military position. It was hotly eontested between the Freneh on one side and the Austrians and Swiss on the other in 1799, and again in 1800. The *Fortress of Luziensteig*, which now eommands the defile, and is eonneeted with a series of block-houses that guard its approaehes, has been eonstrueted since 1830, at the eost of the Swiss Confederation. Near the highest point of the road is an Inn, where visitors from the Baths of Ragatz seek refreshment, and a little church, dedi-

cated to St. Lucius, said to be the most ancient in this part of the Alps. The descent from Luziensteig towards *Maienfeld* (Inn: Alte Post) commands very beautiful views of the Valley of the Rhine, with the Calanda, the heights above Ragatz, and the gorge of the Tamina, to the rt., and the opening of the Prættigau to the l. See § 27, Rte. C, where the way from Maienfeld to Coire is described.

Route D.

MAIENFELD TO SÜS, BY THE PRÆTTIGAU AND THE VEREINA PASS.

	Hrs.' walking	Eng. miles
Schiersch . . .	3	9
Küblis . . .	2½	7½
Klosters-Brücke .	2½	7½
Süs	8	18
	16	42

Diligence daily between the Landquart Station and Klosters, going on to Davos am Platz. Rough foot-path from Klosters to Süs.

The Prættigau is one of the finest valleys of E. Switzerland, and besides two small watering-places, has tolerable inns in almost every village; but as yet, probably because no popular writer has celebrated its attractions, it remains unknown to the great majority of English travellers. It is rather thickly inhabited by an exclusively Protestant population, who appear to enjoy a considerable degree of comfort Most travellers enter the valley from the *Landquart* station (1,739′), on the rly. between Ragatz and Coire (§ 27, Rte. C). A char-road mounts from that place to the entrance of the defile of Clus, and there joins the road from Malans.

The traveller starting from Maienfeld need not make the détour by Landquart, as there is a char-road direct to *Malans* (1,831′), a village chiefly known for the excellent wine grown on the neighbouring slopes. A road from that place meets that mounting from Landquart close to a bridge over the torrent, which also bears the name *Landquart*, issuing from the Prættigau. By the bridge stands an Inn (Zum Felsenbach), and a third road from Zizers meets those already mentioned at that point. The bridge is about 1½ hr. from Maienfeld or from Zizers, and about ¾ hr. from the Landquart station.

Beyond the junction, the road into the Prættigau is carried for several miles along the rt. bank of the Landquart. It at once enters the narrow defile of Clus, where the valley is contracted between the S. base of the *Augstenberg* (7,801′) and the lower range to the S. For more than a mile there is barely room for the road, which is carried at a considerable height above the torrent, and passes under the ruins of the Castle of Fragstein, that once commanded the entrance to the valley, and was provided with a gate by which the only tolerably easy track could be absolutely closed. On emerging from the defile the road passes the hamlet of Pardisla (1,982′), where a track mounts northward to *Seewis*, the chief village of the *Ganeyerthal*, with a *pension* (Scesaplana) frequented in summer. From that village a mountaineer may reach the Wallgau by three passes leading either by the Saminathal to Frastenz, or to Nenzing by the Gamperthonthal. See Rte. F. The ascent of the Scesa Plana may also be effected from Seewis, and is said to be less difficult than by the way from Blundenz, described in Rte. A. The main road, after crossing the torrent from the Ganeyerthal, reaches *Grüsch* (Inn: Krone, fair), overlooked by the ruined castle of Solavers. The floor of the valley is defaced by sand and gravel brought down by the torrent throughout the space of about 2 m. between Grüsch and

Schiersch (Inns: Löwe, good and reasonable; Krone; Schwan), 2,257 ft. above the sea, at the junction of the *Druesenthal* with the main valley. By that way lie two high passes to the Montafun

Valley, the Schweizerthor (7,120′) leading to Vadans, and the Drusenthor (7,822′), lying farther E. under the shattered ridge of the Drusenfluh (9,298′), by which the traveller may reach Schruns through the Gauerthal (see Rte. F). The range of the Rhætikon N. of Schiersch seems to be menaced with rapid destruction. There are many remains of great berg-falls. One of the most recent of these, in 1805, almost completely destroyed the village of Busserein, in the lower part of the Drusenthal.

An interesting excursion may be made, in 3½ hrs., from Schiersch to the summit called *Kreuz* (7,218′). A path mounts about due E. to the highest châlets of the Stälserberg, and a grassy ridge leads thence to the highest point. The pedestrian may descend on the S. side of the mountain to Luzein, and rejoin the road at Dalfazza.

The road up the valley crosses to the l. bank of the Landquart rather more than 1 m. above Schiersch, and mounts gently towards SSE. to *Jenatz* (Inns: Heim's Hotel; Krone), a pretty village 2,461 ft. above the sea. The valley here resumes its true direction, somewhat S. of E., and from time to time the snowy peaks of the Silvretta Alps rise above the nearer ranges. About ½ hr. farther is the spot called Fideris Au, where stands a good and reasonable country Inn—kept by Niggli. The landlord has light chars available for excursions up and down the valley. On rising ground to the S. stands the village of *Fideris* (2,959′). There is near the village a large new Inn, and a *pension* (zum Stern), where board and lodging are had on very cheap terms. 'The landlord, Clas Bohner, knows the mountains well, and is a successful sportsman' [B.]. S. of the village is a narrow glen or ravine called Raschitscher Tobel, running deep into the mountain range separating the Prættigau from the Schanfiggthal. In the midst of the forest that clothes this wild glen stand the *Baths of Fideris*, 3,465 ft. above the sea, about 1½ m. from the main road, and accessible by a very rough track, just passable by a light char. The accommodation is somewhat rough, but in summer the two large establishments are generally crowded. The cookery and wine are said to be fairly good. The waters are alkaline and chalybeate, and considered useful in some pulmonary affections, and for the removal of visceral obstructions. There is a path to Langwies in the Schanfiggthal which is reached in 3 (?) hrs.

Above Fideris Au, the road traverses a very picturesque wooded defile; and after passing below the ruins of the Castle of Strahlegg, it crosses a covered bridge over the Landquart, and soon after reaches *Dalfazza* at the opening of the St. Antönierthal, through which lies a somewhat frequented track connected with three passes leading to the Montafun valley (Rte. F). On high ground to the NW. is *Luzein* (3,140′), a village commanding a beautiful view of the Upper Prættigau. But ½ m. beyond Dalfazza is

Küblis (Inn: Krone, at the post), a village lying deep in the valley, at 2,697 ft., the best head-quarters for excursions in the St. Antönierthal. The new road to Klosters is carried along the slopes above the rt. bank of the Landquart, passing Saas (3,255′), and Mezza Selva (3,445′). Pleasanter for pedestrians is the road by the l. bank, passing Serneus (3,304′) and about a mile farther on, the *Baths of Serneus* (3,232′), a mineral spring containing sulphur and various salts, with very fair accommodation. Nearly due N. rises the *Madrishorn* (9,344′). The road on the rt. bank passes several torrents descending through lateral ravines, the most considerable of which issues from a high glen called Schlappina, said to be one of the wildest in the Rhætikon chain. [A rather steep ascent, a little E. of N., leads in about 1½ hr. from the road to a group of châlets (5,456′), lying at the S. base of the *Schlappiner Joch* (7,185′), one of the lowest passes leading to Montafun.

The track descends through the Gargellenthal (Rte. F) to St. Gallenkirch. From the above-mentioned châlets the head of the Schlappina glen mounts nearly due E., at right angles to its previous course. Keeping the S. branch of the torrent, the traveller may reach a small tarn called Schotten Sec (8,041′), encompassed by high and steep rocks. The N. branch of the torrent leads to the *Garneira Joch* (8,071′), a rather difficult pass lying at the head of the Gannerathal, one of the tributary glens of the Montafun valley. This pass may be considered as the division between the Rhætikon and the Silvretta Alps.]

Klosters is a collective name given to the chief commune of the Upper Prættigau. It includes five scattered hamlets. The parish church is at that called Platz (3,953′), and near to this two new Inns (H. Silvretta and Hirsch). Guides Ch. Jaun, Ch. Jogen, and Anton Schlegel. The road to Davos, over the low Laret Pass, S. of Klosters, is described in § 35, Rte. D. Above Klosters the valley of the Landquart soon divides into several branches, each of them traversed by a torrent that is fed by the snow-fields of the Silvretta Alps. For some distance there are well-marked tracks from Klosters along both banks of the Landquart; but the way is scarcely traced over the Vereina Pass, and except in very clear weather a guide is indispensable. The better way is by the S. bank of the stream. On the opposite side is Monbiel, the poor remains of a village crushed by a berg-fall in the last century. Serpentine is seen in several places near Klosters—a circumstance which will be noted by the mineralogist and the botanist. About 1½ hr. above Klosters is the junction of the Sardascathal, descending due W. from the Silvretta Glacier (Rte. E), with the Vereina Thal drained by the Vereinabach, flowing towards the N. from the Weisshorn and other adjoining peaks in the range dividing the Rhine from the Inn. On approaching the junction of the two torrents, the path to the Vereina Pass mounts at first on the rt. side, and afterwards by a steep slope on the l. bank of the Vereinabach, to the Stutz Alp (6,158′), reached in 2½ hrs. from Klosters. These châlets command a fine view of the *Pischa Glacier* and the *Eisenhorn* (9,816′), rising on the W. side of the Vereinathal, and the *Weisshorn* (10,135′) at its S. extremity. The latter is not to be confounded with a lower peak of the same name (9,318′) rising immediately E. of the Stutz Alp. An easy ascent of ½ hr. leads to the opening of the Vernelathal (Rte. E). On the slope of the mountain, which is covered by huge blocks of gneiss, is a cavern called Baretto Balma, said to have been once inhabited by 'wild men.' A search for flint weapons or bones might reward the pains. Leaving the Vernelathal to the l., the path keeps along the E. side of the main valley, and passing opposite the châlets of Fremd Vereina (6,437′), reaches the opening of the *Süserthal*, a short and steep glen, mounting a little S. of E. to the *Vereina Pass* (8,133′). The ascent is easily made in 1½ hr., and commands a fine view of the *Plattenhörner*, with three nearly equal summits, of which the E. point reaches 10.587 ft. The top of the Piz Linard, the highest of the Silvretta Alps, is seen at intervals during the ascent; but to command a complete view of that fine peak it is necessary to mount to the ridge at the E. end of the Süserthal, immediately S. of the Plattenhörner. This ridge, called on the Federal Map Val Torta (8,724′), lies exactly opposite the W. face of the Piz Linard, and the détour, which may be made in ¾ hr., is well worth the trouble, for the sake of the grand view. It is possible to descend from the ridge into the head of the *Val Sagliains*, which falls SE. into the valley of the Inn between Süs and Lavin, and in point of distance this is the shortest way to either of those places; but the Val Sagliains is an extremely rugged and pathless glen, and the ground is so

difficult that time is lost by taking this course. It is so bare of vegetation, that no cows are pastured there, and the huts in the lower part of the glen are occupied by shepherds.

The Vereina Pass is a depression between some nameless summits S. of the ridge of Val Torta (whose highest peak reaches 9,925 ft.) and a larger mass lying between these and the head of the Vereinathal, crowned by the *Rossthäli* (9,629′). Having reached the pass by following a course but little S. of E., the traveller turns abruptly to SW. across a small plateau with several little tarns or pools, and descends in the same direction into the head of the *Val Fless*, keeping along the l. bank of the torrent. This gradually bends to the l., and after passing opposite to a solitary châlet (6,890′) the course lies SE. In about 1¾ hr. from the summit the path reaches the junction of the Val Fless with the Val Susasca, and joins the far more frequented track leading from the Fluela Pass (§ 35, Rte. F). The course is now due E., along the l. bank of the Susasca torrent, until this is crossed a short way from the high road, which is reached about 3 hrs. from the summit of the pass, at Süs (Inn: Krone), described in § 36, Rte. A.

Route E.

GLACIER PASSES FROM KLOSTERS TO LAVIN, OR GUARDA — ASCENT OF PIZ LINARD.

1. *By the Laviner Joch.* From Klosters to Lavin, 9 to 10 hrs.

A way from Klosters to the Engadine, rather more difficult and laborious, but perhaps more interesting than the Vereina Pass, lies through the *Vernelathal*, which, as mentioned in last Rte., diverges from the Vereinathal near the cavern called Baretto Balma. The Vernelathal mounts nearly due E. along the N. side of the extremely bold range of the Plattenhörner. Its W. end is closed by a glacier-covered ridge, at the N. end of which rises the double peak of the *Schwarzhorn*. The S. peak, nearest the pass, is 10,656 ft. in height, but the higher N. peak attains 10,834 ft. This is the highest of several mountains in the Rhætian Alps bearing the same name, and may be considered the central peak of the Silvretta group. The ascent is extremely rough, and pathless, and but one châlet (7,225′) is passed in the Vernelathal before reaching the base of the ridge covered by the Piller Glacier, over which lies the pass of the *Laviner Joch* (9,131′). The summit, reached in 6 hrs.' steady walking from Klosters, overlooks from the W. side the head of the Val Lavinuoz, and is said to command one of the finest views in this part of the Alps. To the N. rise the two peaks of the Schwarzhorn, and rt. of these is the steep ice-fall of the *Vadret Tiatscha*, a comparatively small glacier descending from a great snow-field lying between the Schwarzhorn and *Piz Buin* (10,916′). S. of the latter is another high nameless peak (10,774′), rising exactly opposite to the spectator.

The descent from the Laviner Joch is said to be steep and rather difficult. The ridges of very steep rocks are broken in one place by a slope of débris, down which the traveller makes his way to the châlets of Marangun, at the head of Val Lavinuoz, a short way below the end of the Tiatscha Glacier. The descent is by a rough track on the rt. bank of the torrent, until, near the opening of the valley, it passes to the l. bank, and falls rapidly to *Lavin*, on the high road of the Engadine. See § 36, Rte. A.

2. *By the Silvretta Pass.* From Klosters to Guarda, 9 to 10 hrs. This pass was traversed in 1864, by Messrs. Girdlestone and Pilcher, following the course suggested by the writer in the first edition of this work; but Prof. Ulrich, who crossed it in 1863, says that it has long been known to the natives. It appears to be rather easier

than the Laviner Joch, but not quite equal to the latter in scenery. From its junction with the Vereinathal (see last Rte.), the *Sardascathal* stretches due E. to the Silvretta Glacier which forms the natural termination to the main branch of the Prättigau. The châlets of the Sardasca Alp (5,364′), lie in the middle of this glen, 2½ hrs. from Klosters. Near this the main stream is formed by the union of four torrents. That from the N. issues from a wild recess in the mountains. To NE. the torrent flows from a pass leading to Montafun (Rte B), while SE. opens the *Verstanklathal*, a short glen by which the upper plateau of the Silvretta Gl. may be reached by a slight detour. The direct way lies due E. along the torrent from the Silvretta Gl. In 1½ hr. from the lower châlets, the traveller reaches the new commodious hut built by the Swiss Alpine Club near the foot of that glacier. The moraine on the rt. bank may be followed for ¼ hr. and the ascent is easily continued by the ice, keeping somewhat to the N. side, opposite the *Verstanklahörner* (10,833′). In about 6 hrs. the summit of the pass is reached without the least difficulty, and as it is a broad snow col, it is best to advance for about ½ hr. somewhat S. of E. to a sort of island of rock, which offers a striking though limited view. From the upper névé of the Silvretta, two small glaciers flow to the S. Of these the *Vadred Tiatscha* (see above) falling into *Val Lavinuoz* is decidedly difficult, but not impossible. The *Cronsel Glacier*, falling SE. into *Val Tuoi*, presents no difficulty, and less than 1¾ hr. suffices to reach the head of that glen. A walk of 50 min. carries the traveller to the Alp Sott (6,611′), and in 1 hr. more he reaches the inn (Sonne) at Guarda (Rte. G). In descending, the traveller passes close to Piz Buin (10,916′), a summit best attacked from the side of Montafun.

Ascent of Piz Linard (11,208′). The Piz Linard being most conveniently accessible from Lavin, and being the most conspicuous as well as the highest peak in the Silvretta group, a short notice of the ascent is given here, chiefly borrowed from M. Weilenmann, who allowed his inefficient guide to remain behind, and accomplished the expedition alone, a course not recommended to future travellers. The Piz Linard is a very steep pyramid, forming a promontory that extends from the dividing range of the Silvretta Alps towards the Engadine, and divides the Val Sagliains from the Val Lavinuoz. Two parallel ridges stretch SE. from the peak towards Lavin, enclosing between them an upland glen locally named Glims, whose torrent ultimately flows S. into Val Sagliains, a little above its junction with the Inn. At the S. base of the peak there is a col or depression in the ridge separating Glims from Sagliains. This point may be reached from either of those glens, but the shortest way from Lavin is by Glims. The pyramidal summit of the Linard appears to be inaccessible on every side, except by the arête that falls a little W. of S. towards the above-mentioned col. A long channel or broad couloir, filled with snow, descends between two ribs of rock, and this appears to offer the easiest access to the mountain. Above this it is necessary to scale the very steep rocks of the highest peak, which are in some places so smooth as to give but little hold for feet or hands, and are seamed by furrows containing snow or ice, demanding caution and experience in the climber. The summit is a sharp arête, with two piles of stones. The S. end is the lower. A few paces beyond the N. end, which marks the highest point of the mountain, the ridge falls away in a formidable precipice towards the head of Val Lavinuoz. As the peak has no near rival in the ranges N. of the Engadine, except the Piz Kesch, which surpasses it by 3 ft., and is fully 18 m. distant, the panorama is one of the most extensive in this part of the Alps. M. Weilenmann warns future travellers

against an impudent pretender, living at Lavin, who offered himself as guide under false colours, and proved himself to be utterly incompetent.

Route F.

PASSES FROM THE VALLEY OF THE ILL TO THE PRÆTTIGAU.

Although no detailed information can be given as to the passes connecting the Wallgau and Montafun with the parallel valley of Prættigau, it seems convenient to enumerate here those which are occasionally used by the people of the adjacent glens, although there is no one of them that can be called frequented. No reliable information as to distances can be given.

1. *Saminathal to Seewis.* At the head of the Saminathal (Rte. A) is a pass which may for distinction be called *Samina Joch*, 7,795 ft. in height, leading to the *Ganeyerthal*, which joins the Prættigau, near Grüsch. At the head of the Saminathal, the track keeps SSE. to a point midway between the *Grauspitz* (8,648′), and a nameless summit (8,543′) lying E. of the Falkniss. The descent towards the Prættigau lies to SE., passing first the châlets of Sturvis (5,207′), then those of Gannei (4,315′), and following the valley about due S. to *Seewis*, (2,986′) less than 1 hr. above Grüsch (Rte. D).

2. *Nenzing to Seewis by the Grosse Furka.* At the head of the Gamperthonthal, which opens into the Wallgau at Nenzing (Rte. A), two passes lead to Seewis. The more frequented is the *Grosse Furka* (7,546′), lying E. of the Grauspitz. The track joins that of the Samina Joch (No. 1) between Sturvis and Gannei.

3. *Nenzing to Seewis, by the Kleine Furka.* The *Kleine Furka* lies considerably farther E. than the Grosse Furka, and near the *Alpstein* (9,347′), a western peak of the Scesa Plana. It appears to be a rarely-used pass.

4. *Cavell Joch, from Lüner See to Seewis.* As mentioned in Rtes. A and B, the Lüner See, a large mountain lake E. of the Scesa Plana, may be reached from Bludenz by the Brandnerthal, or more easily from Vadans in Montafun by the Rellsthal. There are tracks along both sides of the lake which meet above its S. end, and a rapid ascent to WSW. leads thence to the *Cavell Joch* (7,562′). This pass is convenient only for those who wish to reach the lower end of the Prættigau, as the descent lies through the E. branch of the Ganeyerthal, and the pass leads, like those already mentioned, to Seewis.

5. *Schweizerthor, Vadans to Schiersch.* This very grand pass is reached from the N. side through the Rellsthal. Instead of following the path at the head of that valley which leads SW. to the Lüner See, the course lies about due S. to the *Schweizerthor* (7,120′). The pass, lying between the *Drusenfluh* (9,298′) to E., and the *Kirchelispitz* (8,498′) to W., is a scene of the utmost desolation. Vast precipices rise on either side, and huge masses of fallen rock cover the slopes below them. The track leading to Schiersch winds along the slopes to SW., making considerable circuits in order to cross the gullies that furrow the steep declivity. Save the solitary châlet of Tamund (5,384), at the foot of the Drusenfluh, no dwelling is seen till the path reaches Schuders (4,056′) in the *Drusenthal*, whence there is an easy descent by Busserein to Schierseh (Rte. D), 5 hrs. from the pass.

6. *Drusenthor, Schruns to Schiersch.* This pass, higher but less difficult than the last, is the easiest way from Schruns (Rte. A) into the Prættigau, and is sometimes passed on horseback. The pass, 7,822 ft. in height, lies at the head of the Ganerthal, between the Drusenfluh and the equally rugged crest of the *Sulzfluh* (9,324′). On the Prættigau side the descent is nearly due W. along the base of the Drusenfluh, joining the track from the Schweizerthor at the châlet of Tamund, near the head of the Drusenthal.

7. *Schruns to Küblis, by the Partnuner Pass.* The *St. Antönierthal*, mentioned in Rte. D, is said to be the most picturesque of all the lateral valleys of the Prættigau. It is connected by three passes with Montafun. The most westerly of these, called *Partnuner Pass* (7,349′), is reached through the ravine of the Gampadel Tobel, opening into Montafun, a little E. of Schruns. The path bears to the right, along the W. side of a streamlet descending from a mountain tarn, and finally turns sharply to the W. to attain the pass, between the Sulzfluh and *Mittel Fluh* (8,441′). The track, after passing a little lake, descends to the large and comfortable châlets of the *Partnun Alp* (5,866′), at the head of the *Partnunthal*. From hence the mountaineer may in less than 3 hrs. attain the fine peak of the *Sulzfluh* (9,324′), commanding a noble panoramic view. On its E. face are some caverns somewhat difficult of access, but worth a visit for their large dimensions and fine stalactites. The Partnunthal joins the main branch of the St. Antönierthal some way above the village of St. Antönien (4,658′). The track then lies on the rt. bank of Dalfazzer Bach; but about 2 m. below the village there is a bridge, and the traveller may choose between the path on the rt. bank leading to Luzein, and one on the opposite side, by which he can descend directly to Küblis (Rte. D), 6 hrs. from the pass.

8. *Schruns to Küblis, by the Plasseggen Pass.* Towards the head of the Gampadel Tobel the torrent branches into two. The way to the last-mentioned pass is by the l. bank of the SW. branch. Another path following the rt. bank of the SE. branch leads to the *Plassengen Pass* (7,615′). The track descends on the Prættigau side to the châlets of Thaleck (7,103′), at the head of a lateral arm of the Partnunthal. The course then turns sharp to WNW., and in little more than 1 hr. from the pass joins that last noticed at the Partnun Alp.

9. *St. Gallenkirch to Küblis, by the St. Antönier Joch.* From the Plasseggen Pass last noticed the ridge of the Rhætikon, dividing the basin of the Ill from that of the Landquart, extends due S. for a considerable distance to the peak of the *Mädrishorn* (9,344′), and then resumes its easterly direction to its junction with the higher group of the Silvretta Alps. The consequence is that the *Gargellenthal*, which is the next valley eastward of the Gampadel Tobel, penetrates much farther S., and communicates with the middle portion of the Prættigau by the pass here described, as well as with the head of that valley by the Schlappiner Joch (No. 10). At the upper end of the Gargellenthal two torrents form to join the Suggedinbach, which drains the valley. The SE. branch—called *Valcalda*—does not appear to be connected by any practicable pass with the Prættigau; but the S. branch leads to the Schlappiner Joch. Near the châlets of Gargellen, just below the junction of the two torrents, a track mounts due W. to the *St. Antönier Joch* (7,848′), and follows the same direction throughout the rather rapid descent to the village of St. Antönien. The way thence to Küblis is noticed in No. 7.

10. *St. Gallenkirch to Klosters, by the Schlappiner Joch.* From the junction of the two torrents at the head of the Gargellenthal a track mounts due S., chiefly along the rt. bank of the torrent, but crossing to the opposite side at the commencement of the final ascent. The Schlappiner Joch (7,185′), one of the lowest of the passes here enumerated, lies E. of the Mädrishorn, and affords perhaps the easiest and most direct means of communication, but the path is (?) not practicable for horses. The descent to Klosters follows a course somewhat W. of S. through the Schlappina glen to its junction with the Prættigau, 2 m. NW. of Klosters Platz. (See Rte. D.)

11. *Gaschurn to Klosters, by the Garneira Joch.* The *Gannerathal*, opening into Montafun opposite Gaschurn (Rte. A), and the *Garneira Joch*,

connecting it with the E. end of the glen of Schlappina, form the most natural boundary between the Rhætikon and the Silvretta Alps. The height of the pass is 8,071 ft., and the distance is not great. An active mountaineer, instead of taking the circuitous path to Klosters along the Schlappina Bach, might possibly reach that place over the summit of the *Schilt* (9,462′), the highest point in the range dividing the head of the Schlappina from the Landquart. It would be a better plan to attempt that course from the side of Klosters, and with a local guide. In case the ascent and descent of the Schilt should consume too much time, it would then be easy to return to Klosters by the track through Schlappina.

12. *Pattenen to Klosters, by the Sardasca Pass* (?) In Rte. B., and again in Rte. D., allusion is made to a pass connecting the branch of the Fermuntthal called Klosterthal with the head of the Sardascathal. It is a hunter's pass lying partly over glacier, and said to be difficult. It is mentioned here merely to direct to it the attention of mountaineers. Information as to all the above passes will be thankfully received by the Editor.

Detailed information respecting the St. Antönierthal, the Sulzfluh, and the caverns of that mountain, may be found in a little volume called 'Sulzfluh,' published at Coire, 1865. It is an account of an excursion undertaken in 1864 by the Rhætian section of the Swiss Alpine Club.

Route G.

PATTENEN IN MONTAFUN TO GUARDA, BY THE FERMUNT PASS.

In the absence of detailed information of a reliable character, this pass is noticed separately with the belief that it will hereafter be comparatively frequented by mountaineers. It offers to a pedestrian much the most direct way from the Lake of Constance to the Lower Engadine, as a traveller starting early, and availing himself of vehicles as far as Bludenz, may reach Gaschurn or Pattenen in one day from Rorschach or Bregenz. The way then follows the *Fermuntthal* to the foot of the Bielerhöhe, by the track mentioned in Rte. B, and then turning to the rt. mounts along the rt. bank of the glacier torrent descending from the *Ochsenthal*. This is crossed a short way below the point where it issues from the glacier which is considered the main source of the Ill, and after following the moraine some way, the traveller ascends over glacier and considerable snow-fields for 3 hrs. to the

Fermunt Pass (9.206′), lying E. of *Piz Buin* (10,916′), and overlooking the *Val Tuoi*. The way lies by the l. side of a small glacier which soon leads down to the highest pastures. Thence the way (see Rte. E) lies nearly due S., to *Guarda* (5,413′), on the brow of a steep declivity overlooking the valley of the Inn, noticed in § 36, Rte. A.

Route H.

PASSES FROM THE PAZNAUNTHAL TO THE ENGADINE.

1. *Galthür to Ardetz, by the Futschöl Pass.* Galthür, the highest village in the Paznaunthal, stands at the confluence of the Trisanna with the torrent issuing from the *Jamthal*, and draining the *Jamthaler Ferner*, the most

extensive glaciers on the Tyrolese side of the Silvretta Alps. The head of the Jamthal, encircled by many of the highest peaks of this group, is said to offer the perfection of wild and savage scenery. To the rt. is the great Jamthal Glacier, enclosed by a range exceeding 10,000 ft. in height, one nameless summit reaching 10,496 ft. [No pass in this direction appears to be known, but it may be possible to reach the head of the Val Tuoi.] In the centre is the *Augstenberg* (10,443′), connected by a snowy range forming a deep recess to SE. with the *Fluchthorn* (11,142′). The *Futschöl Pass* (9,078′) lies over a depression in the snowy wall of this amphitheatre. On the S. side the descent lies almost altogether over rocks, keeping a SE. direction till near a solitary châlet (7,887′), at the head of the Val Urschai, when the way turns S.W. through that glen. This is the NE. branch of a lateral valley of the Engadine, whose torrent descends to join the Inn between Fettan and Ardetz. The *Val Urschai* is all but completely enclosed by high snowy peaks. Its NE. end is closed by the *Piz Fatschalv* (10,430′), and a steep and high ridge extends SSW. from that summit to the *Mintschun* (10,076′). A little below the Urschai Alp (6,913′) the *Val Urezas* descends from the W. to join the main branch of the valley, henceforward called *Val Tasna*. This is a very wild glen, contracted between the base of the Mintschun to the E., and the *Piz Cotschen* (9,938′), dividing it from Val Tuoi, to the W. The way to the Engadine is along the E. slope of the valley till near the point where the road from Ardetz to Fettan enters the opening of Val Tasna, in order to avoid the deep ravine cut by the torrent lower down. Those who seek better accommodation than is to be had at Ardetz or Fettan, will either pass through the latter village, and push on to Schuls, or else keep to the rt. to Ardetz, and cross the Inn to Tarasp. See § 36, Rte. A.

2. *Ischgl to Remüs, by the Fimber Joch.* As mentioned in Rte. B, the Fimberthal joins the Paznaunthal from the S. at Ischgl. It is a singular arrangement that the head of this glen should belong to Switzerland. The Swiss portion, including some extensive pastures and a small group of châlets, 7,431 ft. above the sea, is accessible from the Engadine only during the height of summer, by a high and rather difficult pass. This is called the *Fimber Joch* (8,547′), and is reached by a track that ascends SE. from the châlets. At the top it is necessary to bear to the l., or ENE., in order to descend by a very steep track into the head of *Val Choglias*. The Choglias Alp (6,724′) lies at the junction of several torrents descending from the surrounding snowy peaks. To the N. is the *Piz Vadret* (10,184′)—not to be confounded with others of the same name. Eastward rises the *Stammerspitze* (10,683′), and beyond it, but not visible from hence, the *Muttler* (10,824′). A path leads down the Val Choglias, by the l. bank, to *Griosch* (5,948′), at the opening of Val Tiatscha, a short glen leading to the base of the Muttler, and to a hunter's pass W. of that peak into Samnaunthal. About 1 m. lower down, the *Val Laver* opens on the W., and joins its torrent to that of Val Choglias. The united glens are henceforward called *Val Sinestra*, and a frequented track leads SE., by the l. bank of the stream, to *Remüs* in the Engadine (§ 36, Rte. A).

3. *Ischgl to Finstermünz, by the Zebles Pass.* A traveller ascending the Fimberthal, before reaching the head of that valley, which belongs to Switzerland, may bear to the l. up a short lateral glen which leads to the *Zebles Pass* (8,333′), on the N. side of the Piz Vadred (10,184′). From the summit the way lies due E. into the head of the Samnaunthal (see next Pass), and along the principal torrent of that valley which joins the Inn a short way below the hamlet of Finstermünz. See § 36, Rte. A.

4. *Ischgl to Finstermünz, by the Vignitz*

Pass. The range dividing the Paznaunthal from the Inn extends in a tolerably direct line from the Schwarzhorn (10,834′), which may be considered the central peak of the Silvretta Alps, to the Piz Vadred. It here divides into two branches. The longer ridge, following the general direction of the valleys on either side, extends to the Schönjöchlberg over Prutz. With the exception of the detached summit of the Vesulspitz (10,154′), none of the peaks of this range attain 10,000 ft., though many of them approach that limit. A much higher, but shorter, range projects to the eastward from the Piz Vadred, including the Stammerspitz (10,683′), the Muttler (10,824′), and the Piz Mondin (10,377′), and terminates at the defile of Finstermünz. In the angle between these two ranges is a pastoral valley—*Samnaunthal*—whose torrent, after receiving the stream from a lateral glen called *Val Sampuoir*, falls into the Inn at the lower end of the defile of Finstermünz. The Val Sampuoir and the greater part of Samnaunthal belong to Switzerland, but in the lower part of the latter valley the *Schergenbach* torrent forms the frontier between Switzerland and Austria. The small Swiss population of the valley have no convenient access to the Engadine without passing through Austrian territory, though there are two hunters' passes, practicable in the height of summer, leading to Val Choglias, and also a very rough track, along the N. or Swiss side of the defile of Finstermünz, from the junction of the Schergenbach with the Inn to Martinsbruck. The Zebles Pass (No. 3) leads from the Fimberthal into the head of the Samnaunthal. Another way to the Swiss portion of the valley is by the *Vignitz Pass* (8,855′), at the head of the *Vignitzthal*, which, as mentioned in Rte. B, joins the Paznaunthal between Sinsen and Kappel. On reaching the head of the Vignitzthal, at the E. base of the Vesulspitz, the way lies to the l., and mounts steeply towards ESE. to the pass, which lies SW. of the Gribellekopf. A steep descent leads to *Compatsch* (5,591′), the principal hamlet of the Samnaunthal. Half a mile lower down, the Schergenbach forms the boundary of Switzerland, and the easiest path to the Inn is on the N. or Austrian bank.

5. *Mies to Finstermünz, by the Gribelle Joch.* The *Gribellekopf* (9,508′). rising at the head of a N. branch of the Samnaunthal, forms the limit between Switzerland and Austria. and the Gribelle Joch, lying E. of the summit, affords a passage from the Paznaunthal to the Inn without entering Swiss territory. On the N. side the ascent to the pass is about due S., through the *Gribellethal*, and the descent bears towards SSE., along a torrent fed by the snows of the Gribellekopf, and then along the Schergenbach to the hamlet of Schergenhof, which is the shortest way to Nauders. If the traveller's course be down the Inn, he should not take that course, but follow a path from Spiss that joins the high-road from Nauders to Landeck (§ 44), 2 m. below Schergenhof.

SECTION 35.

ALBULA DISTRICT.

Under the name Albula district are here included the Alpine ranges between the road of the Splügen, from Maienfeld to Chiavenna, the road from Chiavenna to Süs in the Engadine, and the path from Süs to Maienfeld through the Prættigau described in § 34, Rte. D. These limits correspond to the main valleys, and the best marked passes in this part of the Alps. The very extensive mountain region included within these boundaries

is chiefly drained by three tributaries of the Rhine, the streams flowing into the Inn being short and inconsiderable. Of the three main valleys, the northernmost and least important is the Schanfiggthal, which joins the valley of the Rhine at Coire. The central valley is drained by the Albula, or Oberhalbstein Rhine. This enters the Hinter Rhein near Thusis, through the defile of Schyn, and is formed by the union of three torrents, each draining a considerable tributary valley. That of Oberhalbstein to the S. gives access, by the Julier Pass, to the head of the Engadine; a SE. branch leads to the Albula Pass; and a NE. branch—the valley of Davos—runs parallel to the Engadine. The third of the main valleys of this district is the Aversthal, hitherto unjustly neglected by travellers, through which the torrents from several high valleys, whose prevalent direction is from S. to N., descend to the Hinter Rhein near Andeer.

With the exception of the Piz Platta, Piz d'Aëla, and some other outlying peaks, the highest summits of this district lie in the range forming the watershed between the Inn, or the Mera, and the Rhine. This range is broken by many comparatively low passes, and forms a succession of groups most of which attain to or exceed 11,000 ft.

Reckoning from NE. to SW., the first of these is the Scaletta group, including many summits over 10,000 ft.; but the highest—Piz Vadred—does not surpass 10,610 ft. Separated from the last by the Sertig Pass is the Albula group, N. of the Albula Pass; it contains the Piz Kesch (11,211′), the highest summit in the ranges N. of the Inn, and Piz Uertsch (10,738′). The most extensive mountain group—which may conveniently be called the Julier group—lies between the Passes of the Albula and Julier, and includes the Piz d'Err (11,139′), Cima da Flix (10,945′), and Piz Munteratsch (11,106′). Closely connected with the Julier group, but drained by streams that flow altogether towards the Inn, is the small isolated group crowned by the Piz Ot (10,660′), which may more conveniently be described in the next §. The Gravasalvas group, remarkable as containing the sources of the Inn, the Mera, and the Oberhalbstein Rhine, is the lowest of those here enumerated; its highest point, Piz Lungen, not surpassing 10,400 ft. The considerable mountain mass enclosing the basin of the Averser Rhein, and separating the Aversthal from Val Bregaglia and the V. di S. Giacomo, is not known by any common designation. It culminates in the Piz d'Emet (10,502′), the Pizzo della Palü (10,374′), and the Pizzo Stella (10,266).

Many of the high peaks above enumerated may doubtless be visited from the Engadine; but the greater glaciers lie on the N. side of the range, and should be explored from that direction. Molins and Bergün may both be recommended as good head-quarters for a mountaineer; but the naturalist who wishes to devote time to exploring the Julier group may prefer the less comfortable, but more conveniently placed, inn of Weissenstein.

Route A.

COIRE TO SAMADEN, BY THE JULIER PASS.

	Post leagues	Eng. miles
Churwalden . .	2¼	6¾
Tiefenkasten . .	3⅝	11¼
Tinzen . . .	2¼	6¾
Molins . . .	1½	4½
Bivio Stalla . .	2	6
Silva Plana . .	3¼	9¾
Samaden . . .	2½	7½
	17½	52½

A post-road traversed twice daily by diligence in summer in 13 hrs.

The increased resort of visitors to the waters of St. Moritz, and of tourists to the Engadine, has made this a much-frequented road. As it is by far the easiest way to approach the valley of the Inn from the side of Switzerland, it is here given precedence over the

other principal branches of the Albula valley.

It has been already said that the streams which unite their waters in the Oberhalbstein Rhein flow into the Hinter Rhein near Thusis, and it might naturally be supposed that the road from the Rhine valley would follow the course of these waters in its way to the Oberhalbstein. But a glance at the map shows that this route would be a circuitous course; and besides this, the defile between Tiefenkasten and Thusis is so narrow, that the construction of a carriage-road between those places has been a difficult undertaking. At the same time it may be seen that the Oberhalbstein valley, descending from S. to N., is to a great extent continued in the same direction towards Coire by a depression which at the centre does not exceed 5,089 feet in height, and which sends down a stream in one direction towards Coire, in the other towards the Albula. The stream leading to Coire, called *Rabiosa*, joins the Plessur torrent, issuing from the Schanfigg Thal, about 1 m. above Coire; and the post-road, commanding a fine view of the latter valley (Rte. E) up to the Strela Pass, mounts steeply above the l. bank of the united torrents, soon entering the glen of the Rabiosa. The ascent is throughout rather steep for wheeled vehicles, and the horses do not get out of a walk. After passing Malix, and below the ruined castle of Strassberg, the post station of

Churwalden (Inns: Kreuz; Krone), 3,976 ft. above the sea, is reached. There are here considerable remains of a large monastery, and not far off of a convent, both destroyed during the wars of religion, owing, as some say, to the disreputable conduct of the inmates. A short way on the N. side of the watershed is *Parpan*, a neat mountain village, in a cold and bleak position; and beyond it extends a bare tract, inappropriately named *Valbella* (5,089′), forming the summit of the pass between Coire and Tiefenkasten, but being in reality a deep depression between the range of the *Stätzerhorn* (8,458′) to the W. (easily ascended from hence, and described in § 27, Rte. C), and the higher range to the E., including the Weisshorn (9,111′), Rothhorn (9,406′), and *Lenzerhorn* (9,544′). The pass commands a rather extensive view to the N. On the S. side the road descends gently by the E. side of a mountain tarn called *Vatzer See* (4,898′), and leaves to the rt. the stream which descends to join the Albula through the defile of *Schyn*. For several miles the road crosses a barren heathy tract (called Heide), leading in 7½ m. from Churwalden to

Lenz (Inn: Krone, good and cheap). The village, standing (4.331′) at a great height above the Albula, commands a fine view, but this is better seen from the low hill between it and Obervatz. To the E. is the main valley of the Albula, dividing near Filisur into its two main branches. Southward, beyond the deep trench traversed by the Albula, opens the Oberhalbstein valley, and between this and the Albula the cluster of high peaks crowned by the Piz d'Aela (10.893′). Westward, above the defile of Schyn, the traveller overlooks a portion of the Rhine valley, and the peaks W. of Thusis.

Travellers bound for the Albula or Davos may follow a footpath, or take a rough char-road by Brienz to Alveneu (Rte. C). The road descends at first gently from Lenz to *Vatzerol*, where, in 1471, the deputies of the Gotteshaus Bund, formed among the people of these valleys, met those of the Grauer Bund from the Vorder Rhein valley, and the Zehngerichtes Bund, formed in Schanfigg and Prættigau, and there constituted the Confederation of the Graubünden, or Grisons League, which still survives, although its scope was enlarged by its admission as a canton into the Swiss Confederation. From Vatzerol the road descends rapidly in long zigzags to the banks of the Albula, which is crossed a short way above its junction with the torrent from the Oberhalbstein.

at the village of *Tiefenkasten* (2,917′). with two Inns (zum Albula, good and clean; H. Julier. large new house). The *Oberhalbstein*, extending from hence about 18 m. to the base of the Roccabella above Bivio Stalla, abounds in fine scenery both in the main valley and its numerous lateral tributaries, and deserves far more attention than it has commonly received from tourists. There are many ruins of mediæval castles, and at various points on the road remains of a more remote period have been found,—not a surprising fact, since it leads to the Julier and Septimer Passes, once traversed by important Roman roads, and believed to have been also frequented by the earlier Celtic population of this region. The Julier road mounts by the rt. bank of the torrent, and before long enters the remarkable gorge of Stein, reaching in 1 hr. the hamlet of *Burvein* (3,901′), where a considerable mass of ancient coins, said to have been Celtic and Etruscan, were found in 1786. High on the opposite bank is the village of *Salux*. Passing *Conters* (Inns: Steinbock; Kreuz), the traveller in 1¾ hr. from Tiefenkasten reaches *Schweiningen* (4,059′), at the W. base of the *Piz St. Michael* (10,371′), and opposite the opening of *Val Nandro*, a long and narrow glen, through which an unfrequented path mounts SSW. to the Aversthal.

About ½ hr. farther on is *Tinzen* (4,229′), with one or two poor (?) country Inns, the home of a famous chamois-hunter named Spinas, much respected in this valley. E. of the village is the opening of *Val Err*, interesting to the mountaineer as well as the geologist, as it divides the granitic group of the Piz d'Err from the three remarkable dolomitic peaks—*Piz d'Aela* (10,893′), *Tinzenhorn* (10,276′), and *Piz St. Michael* (10,371′), very difficult of access, and so sharp that little snow can rest upon them. They have all been climbed since 1865. Many details, chiefly geological, respecting the Piz d'Err and neighbouring ridges is given by Professor Theobald in the 'Jahresbericht des Naturforschender Gesellschaft Graubündens' for 1860–1861. [A path mounts from Tinzen by the rt. bank of the torrent issuing from Val Err, and on reaching the upper level of the valley crosses to the l. bank. Grey slate is the prevailing rock, but serpentine appears at many points on the l. bank. At a group of châlets (6,385′), the main branch of the Val Err mounts SE. to the glacier-covered ridge that closes its head. In that direction a difficult pass into Val Bever, at least 10,000 ft. in height, was made by MM. Studer and Escher. A shorter branch of the valley leads a little N. of E. from the châlets by a tolerably easy pass immediately on the S. side of Piz d'Aela to the track of the Albula, which is reached about 1 hr. above Bergün.]

The high road mounts from Tinzen in about 2 m. to Roffna, and soon after crosses for the first time to the l. bank of the Oberhalbstein Rhein, and reaches *Molins* — Germ. Mühlen — 4,793 ft. above the sea (Balzer's Inn, comfortable, civil landlord), a good station for a mountaineer or a naturalist. In the immediate neighbourhood rise several of the highest peaks of this district. On the opposite side of the valley two torrents descend from the Piz d'Err, but it does not appear that the summit has been reached from this side. The *Piz d'Err* includes three principal peaks—the northern (11,139′), which is the highest by a few feet; E. of this, overlooking the head of Val Bever, is a lower peak (10,699′); and S. of the first is the second in height (11,132′). To the S. of Piz d'Err is the *Cima da Flix*, also including three peaks, of which the two highest—(10,947′) and (10,787′)—lie close together, and a southern summit (10,519′) rises at the head of Val d'Agnelli. According to Theobald, the Cima da Flix may be reached from the southern of the two glens opening opposite to Molins (Val Flix?), or from a SE. arm of the same glen, called

Val Savriez, and from hence the S. peak ('eastern peak,' Theobald, but ?) of Piz d'Err is reached without further difficulty by the snowy ridge connecting them. A western promontory from Piz d'Err terminates in the *Piz Cucarné* (8,924′). Here, about the junction of the serpentine with metamorphic slates, the botanist may find *Ranunculus parnassifolius*, *Dianthus glacialis*, and *Lychnis alpina*.

Molins stands at the junction with the Oberhalbstein Rhein of a torrent issuing from the *Val Faller*, which here opens to the SW. On the NW. side of this glen is a high and rugged ridge crowned by the *Piz d'Arblasch* (10,512′), and the *Piz Forbisch* (10,689′). But these are surpassed by the adjoining peak of the *Piz Platta* (11,109′). Rather more than 1 hr. above Molins the Val Faller divides into two branches at the châlets of Plan (6,342′). One branch of the valley, called Val Gronda, passes on the N. side of the Piz Platta which is (?) accessible from this side. The other branch—Val Berela—mounts due S. on the E. side of Piz Platta and of the *Fopperhorn* (10,371′). Juf, in the Aversthal (Rte. K), may be reached from the head of Val Berela by a rather high, but not difficult pass. It is also possible to reach Cresta, lower down in the same valley, by a much more arduous pass between the Piz Platta and the Fopperhorn.

A short way from Molins the road returns to the rt. bank of the Oberhalbstein Rhein, now reduced to the condition of a mountain torrent, and mounts beneath the ruins of Splüdatsch to *Marmorera*, or Marmels (5,361′), a village about 1 hr. from Molins, standing below the remains of two castles, one of them perched on a seemingly inaccessible rock. A Lombard dialect of Italian is spoken in the upper part of the valley. *Bivio* (5,827′), also called Stalla, the highest village of Oberhalbstein, stands, as the name imports, very near the junction of the tracks leading to the Julier and Septimer passes. The Oberhalbstein may be said to terminate at the base of the *Roccabella* (8,940′), SE. of Bivio. The track of the Septimer, leading to Val Bregaglia (Rte. I), mounts thence to SSW. through the Val Cavreccia, while the high road to the Julier lies due E., through a wild and somewhat dreary upland valley, between the Gravasalvas range to the S., and the Julier range, extending from the S. point of the Cima da Flix to the *Munteratsch* (11,106′). Two glens descend from the last-mentioned range towards the high road. That on the W. side of the pass is called *Val d'Agnelli* on the Swiss Federal map, and the other on the E. side is apparently known also by the same name. Casanna slate and verrucano appear in the latter glen, and may be traced eastward to the neighbourhood of St. Moritz and Samaden. The diligence employs 2 hrs. from Bivio to reach the summit of the *Julier Pass* (7,503′). Before doing so, the road passes a small group of houses called Vedutta, at the opening of the western Val d'Agnelli. There is here a tolerable mountain Inn, which affords convenient quarters for a naturalist. Though higher than most of the alpine passes practicable for carriages, the Julier is one of the easiest and safest. It is remarkably free from avalanches, and the snow is said to melt here earlier in the spring than is usual at so great a height. On this account the pass has been known and used from the earliest times. The Romans, under Augustus, carried a military road from Chiavenna over the Maloja to Silvaplana, and thence over the Julier, in preference to the much more direct route of the Septimer; and the same course was commonly followed during the Middle Ages, when this was the most important commercial road from N. Italy to the L. of Constance. The present carriage-road was constructed in 1823, but for several years it was little frequented, owing to the neglected condition of the lower portion through the Oberhalbstein valley. It is now

in good order; but since the completion of the Splügen road it has ceased to be used for traffic between Coire and Lombardy. On the E. side of the summit are two roughly hewn columns which have furnished matter for much controversy. They have been by some attributed to Julius Cæsar, whose name would thus be connected with that of the pass; but others refer their origin to the Celts, and the name to a Celtic deity. Jul.

The road descends gently towards the E. until it reaches the slope overlooking the head of the Engadine, when some zigzags, cut off by the footpath, lead down to

Silvaplana (Inns: Wilder Mann; Kreuz). This village, and the road by St. Moritz to Samaden, are described in § 36, Rte. A.

Route B.

THUSIS TO TIEFENKASTEN.

4 to 5 hrs'. walk. New post-road.

The road here described offers a far more interesting way for approaching the Julier, or the other passes described in the following Routes, than the high road from Coire to Tiefenkasten (Rte. A). There is the further inducement, that a traveller who has not already seen the Via Mala may visit that remarkable defile and return to Thusis on the first day from Coire, joining the Julier road, or that of the Albula, early on the following day by a highly picturesque and agreeable path. A post-road from Thusis to Tiefenkasten along the l. side of the Albula was opened for traffic in 1869. The track by the rt. side of that stream noticed below is more interesting. The name Schyn Pass, often applied to it, is incorrect. The *Schyn* is the extremely steep and narrow ravine cut by the Albula in its descent to join the Hinter Rhein, and until the new road was made it was necessary to ascend to a great height above the stream, and then descend to Alvaschein.

The new road descends from Thusis to cross the Nolla and the Rhine and then turns N., ascending gently to Sils. Beyond this the road passes two ruined castles, and winds upwards through forest, with occasional views of the defile on the l. through which the Albula descends to join the Rhine. As the mountains close together on either side the difficulties of the engineer increased, and several short tunnels are traversed before the road crosses the *Solisbrücke*, about 410 ft. above the Albula torrent. The new bridge replaces an older structure on the same foundations. The valley now opens out, and the road ascends to *Alvaschein* (3,337′), and amid very pleasing scenery, bears SE. till it joins the main road from Coire (last Rte.) opposite to Tiefenkasten.

The track by the rt. bank of the Albula is more attractive to a pedestrian.

Crossing the Rhine opposite Thusis, and avoiding the village of Sils, the way lies across a bridge over the Albula to *Scharans*, nearly 1 hr. ascending from Thusis. The village Inn commands a beautiful view of the Rhine valley. There is here a very ancient lime-tree, adorned by a rudely-carved image of the mythical king Rhætus, who is not unfrequently transformed by the country people into a saint. On the opposite side of the gorge of the Albula are the ruins of Campi, often visited from Thusis (§ 31, Rte. A.). The path from Scharans mounts partly through wood, partly along the face of rocks, till it reaches a height of 1,600 or 1,800 ft. above the Albula. A considerable détour is necessary to cross the ravine cut by the torrent from the Vatzer See (Rte. A.), a little below the village of *Obervatz*, and an oratory is passed that commands a fine view to the W. On reaching the village of *Alvaschein* (3,337′), the traveller bound for the Julier road should descend to Tiefenkasten. Should his direction be to the Albula or Davos, he should mount gently along the slope of the mountain to Vatzerol, and thence by Brienz to Alveneu.

Route C.

COIRE TO SAMADEN, BY THE ALBULA PASS.

Carriage-road Diligence daily in 12 hrs.

An active traveller starting from Coire by the diligence at 5 A.M., may leave the high road at Alveneu, and reach Samaden as soon as the diligence. The new road is well made, but the ascent is long and steep; so that an active walker will accomplish the distance between Bergün and Ponte in less time than a carriage. It is wiser to take advantage of the diligence as far as Alveneu, or even Bergün, as in fine weather the slopes between those places are extremely hot. A two-horse carriage from Coire to Samaden costs 120 fr. The foot-path from Lenz (Rte. A), and the char-road which turns off near Vatzerol, pass along the slopes N. of the Albula to *Brienz*, and then below the very picturesque ruins of the castle of Belfort. Leaving to the l. the road to the village of the same name, the road to Bergün descends to the *Baths of Alveneu*, on the rt. bank of the stream. There is here a rather rough but clean-looking bathing establishment for the patients who frequent the sulphureous waters that have given this place a local celebrity. Some unusual plants, such as *Astragalus monspessulanus*, *Tommasinia verticillaris*, and *Centaurea rhætica*, show the warmth of the climate of the valley. A short way above the Baths the char-road crosses the considerable stream of the Landwasser, issuing from the valley of Davos (Rte. D), and then mounts gently in about 1 hr. from the Baths to *Filisur* (3,474′), a pretty village with a country Inn, standing under the imposing ruins of *Greifenstein*. Mines of silver, copper, and iron have been worked in the neighbourhood. A glen lying S. of the village, called *Val Sparlotsch*, leads up to a hollow between the Piz d'Aela and Tinzenhorn. An interesting walk might probably be made by crossing the ridge between those peaks, and descending through the Val Err to Tinzen (Rte. A).

Above Filisur the valley contracts, and the road passes to the l. bank of the Albula, but does not begin to ascend rapidly till after passing some abandoned smelting-houses at a place called Bellaluna. Here the paved track, still passable for light chars, enters a very picturesque defile, called Bergüner Stein. It has been compared to the Via Mala, with which it has nothing in common except the fact that it is a defile. The finest part is above a bridge where the road returns to the rt. bank, and is carried for nearly ¼ m. along the face of the nearly vertical rocks. Nearly 2 hrs. from Filisur are required to reach the point where in an opening of the valley stands the mountain village of

Bergün (4,557′). Excellent quarters are found here at the house of the Landamman Cloeta, now opened as a regular inn (zum Piz d'Aela). The position of this village has many attractions for the mountaineer. To the SW. rises the very bold dolomite peak of the Piz d'Aela (10,893). To the E. is the opening of *Val Tuors*, which deserves more attention than it has yet received. The lower part commands very fine views, especially of the Piz d'Aela, while the upper end leads to some of the highest peaks of this group.

[There is a rough track, passable for chars, as far as the hamlet of Ponte d'Alp, 2 hrs. from Bergün. Here Val Tuors divides: a NNE. branch mounts between the *Piz Forun* (10,010′) and a steep ridge whose highest summit is the *Hoch Ducan* (10,082′), and leads to the lakes of Raveiselig (Rte. H), by which the traveller may descend into

Val Sulsanna, or reach Davos Platz, by the Sertig Pass. In the opposite direction another branch of Val Tuors leads to *Piz Uertsch* (10,738′), seemingly accessible from this side. The E. branch of Val Tuors, called Salüt on the Federal Map, is probably the most interesting. The torrent flows from the *Vadred da Porchabella*, a large glacier on the N. side of *Piz Kesch* (11,211′), which also feeds the torrent at the head of Val Sulsanna. The remarkable tower-like peak of Piz Kesch was attained, in 1864, by Messrs. Tuckett and Fowler, with C. Michel and M. Payot. From the Platzli châlets 2½ hrs. above Bergün, they reached in 3½ hrs. the ridge above the V. da Porchabella, overlooking the head of the Eschia Glacier. From this—called *Eschia Pass*—they afterwards descended in 3 hrs. to Ponte. From the same point they reached the peak in 1¼ hr. A rather lower point had been previously attained by M. Coaz.]

Above Bergün the ascent by the new road to the Albula begins. To the l. is passed the opening of *Val Tisch*, leading up to some abandoned iron mines high up on the NW. side of Piz Uertsch. Fully 1 hr. above Bergün, the road crosses to the l. bank, at a point where an opening in the range to the W. leads up to a depression, or col, S. of Piz d'Aela, leading by Val Err to Tinzen. At the châlets of Naz (5,725′), the wild glen of *Muglix* opens to SW., and the road of the Albula turns eastward and maintains that direction till it enters the Engadine at Ponte. After passing several châlets, the traveller in 2½ hrs.' steady walking from Bergün reaches *Weissenstein* (6,824′). A new inn has been opened here, which may attract mountaineers and botanists by the many rare plants found in the neighbourhood of the pass. Of these the following deserve to be noted:—*Lychnis alpina*, *Oxytropis lapponica*, *Saxifraga planifolia*, *Senecio carniolicus*, *Crepis hyoseridifolia*, *Campanula cenisia*, *Polemonium cæruleum*, *Kobresia caricina*, and *Carex irrigua*. The small lake near the inn, which is the chief source of the Albula, formerly produced excellent trout, but they have disappeared since it has been drained to utilise some peat on its shores. Above the Weissenstein Inn the scenery is very wild, and the new road makes a wide sweep to the rt. Towards the upper part of the pass it lies amidst scattered blocks of stone, where scarce a trace of vegetation remains in view, with patches of snow on the slopes to the rt.

The *Albula Pass* (7,589′) and the valleys leading to it on either side form a long furrow between two parallel ranges, of which the higher northern ridge, crowned by Piz Uertsch, is chiefly formed of sedimentary rocks, the main peak being composed of dolomite. The southern ridge is a promontory from the mass of Piz d'Err, separating the Albula from the Val Bever. It is mainly composed of gneiss or granite, but the summit immediately S. of the pass, called *Piz Giumels* (9,623′), contains a considerable mass of white gypsum, which is supposed to have originated the name of the pass. There is no difficulty in crossing the ridge due S. of the Weissenstein Inn, leading to Bevers through Val Bever (§ 36, Rte. C), a shorter and more interesting mountaineer's route than that by Ponte. Piz Uertsch is said to be easily accessible from the summit of the Albula, but the Editor has no account of the expedition.

The descent from the Albula Pass lies for some way on the S. slope of the upland valley, and is at first rather gentle. Lower down it enters larch woods, and lies for the most part on the l. bank of the torrent. 1¾ hr. suffices to reach the main valley of the Engadine at

Ponte (5,548′). This village, and the road between it and Samaden, are described in § 36, Rte. A.

Route D.

LENZ TO KLOSTERS, BY DAVOS.

	Hrs.' walking	Eng. miles
Alveneu . . .	1¾	5¼
Wiesen . . .	1¾	5¼
Glaris . . .	2¼	6¾
Davos am Platz . .	2	6
Klosters . . .	2¾	8¼
	10½	31½

In the preceding Rte. and in Rte. A, the two branches of the Albula stream that lead to the valley of the Inn have been described; it is now necessary to notice the third of the main branches of the same stream which drains a considerable valley parallel to that of the Inn. but flows in an opposite direction — from NE. to SW. This valley, named *Davos*, meaning behind, or 'at the back of the world,' is said to have been discovered in the 13th century, and colonised by settlers from the Upper Valais. It is connected with the main valley of the Albula by a narrow and difficult defile, through which the Landwasser descends to join that stream; but the easiest access is by the road across a low pass connecting the head of the valley with Klosters in the Prættigau.

The road between Lenz and Platz has been improved of late years, but is, in places, rough and narrow. It is practicable for a light char, here called *bergwagen*, but little, if any, time is gained. It is not always too easy to find a vehicle at Lenz. A pedestrian, profiting by short cuts, may much reduce the distance between Alveneu and Glaris.

After reaching Brienz, the next village to Lenz (noticed in Rte. C), the traveller should choose the road to the l., keeping at a considerable height above the river, instead of descending to the baths, and in about 1¾ hr. from Lenz will reach *Alveneu* (4,344′). The church is a curious specimen of *renaissance* architecture, and contains some good specimens of early wood-carving. Standing on a steep slope, 1,100 ft. above the river, the village commands a very fine view of the peaks to the S. The road into the Davos valley traverses Schmitten and Wiesen, both standing at a great height above the bottom of the valley. It winds along the mountain slopes, making every now and then a considerable circuit in order to cross the deep furrows excavated by torrents. *Wiesen*, with good rustic quarters at the house of Palmi, stands at 4,770 ft., opposite to *Jenisberg*, a village at a still higher level above the l. bank of the Landwasser. Though little more than a mile apart, it takes fully an hour to follow the path to that place across the valley, where a fine new bridge spans the torrent at 256 ft. above the water. From Jenisberg the traveller in search of a view may ascend the *Stulsergrat* (8,471′) and descend by its W. side to Filisur. It is not a much longer course for a pedestrian bound for the head of the valley to pass by Jenisberg, and descend thence to Schmelzboden, than to follow the char-road by the rt. bank. This pursues a very circuitous course, winding round three deep ravines cut by lateral torrents, before it gains a projecting buttress which commands a fine view of the valley, and whence it descends by zigzags to the level of the Landwasser. The torrent is crossed and recrossed, and after passing some abandoned smelting-works at Hofnungsau—the place is best known as *Schmelzboden*—the road begins to ascend along the l. bank through the narrow defile leading to *Glaris* (4,770′). Another more interesting way from Wiesen to that village, practicable only on foot, is by a path along the steep slope above the rt. bank, turning out of the char-road near the point where it begins to descend towards the Landwasser. This track is feared in winter and spring on account of avalanches, but is quite safe in summer, and commands fine views. Through the *Bärenthal*, a lateral glen opening W. of Glaris, it is not difficult to reach Arosa, mentioned in next Rte. Above Glaris the road ascends gently along the rt. bank. On the opposite bank is a

small bathing establishment called *Spina Bad*, intended for patients who use the waters of a sulphureous spring which breaks out on the slope of the mountain 1,000 ft. higher up. About 1 hr. above Glaris is *Frauenkirch*, where the Sertigthal (Rte. H) opens to SSE., and a path from Arosa, by the *Mayenfelder Furka* (8,022′), descends into the Davos valley. A walk of 1 hr. more leads to the principal village in the valley, 5,105 ft. above the sea. It is here known as Platz, but as that name is commonly applied in the Grisons to indicate the chief village or hamlet of a valley, it is called, when spoken of elsewhere,

Davos am Platz (Inns: Schweizerhof; Post; Curhaus; all very fair, the first two new; Zum Strela, rustic, not bad; restaurant in the Rathhaus). The head of the Davos valley is a purely pastoral district, surrounded by mountains about 9,000 ft. in height. The scenery is very pleasing, though not of the first order, and as many upland valleys converge at this point, many excursions are open to the mountaineer. 'The Rathhaus,' until lately the only inn, 'was formerly decorated with more than thirty wolves' heads slain in the neighbourhood—proof of the prevalence of these animals. A wolf-net (Wolf-garn) is still hung up here, but the animals have nearly disappeared.' [M.] The path of the Strela leading hither from Coire is described in the next Rte., and the passes into the Engadine by the Fluela, Scaletta, and Sertig Passes will be found in the following Rtes.

The most interesting excursion from Platz is the ascent of the Schwarzhorn, described in Rte. G. A shorter and easier walk is the ascent of the Weissfluh. There are two peaks bearing the same name, about equally near to Platz, the one on the N., the other on the S. side of the Strela Pass. The higher and more interesting of the two is that on the N. side. The way is by the road to Klosters, until after passing the Schiabach, and reaching the hamlet of Dörfli, when the course lies to the l., up the slopes of the Dörfliberg. On reaching the middle region of the mountain the way is about WNW., through a stony glen. From the ridge at its head, the summit of the *Weissfluh* (9,262′), formed in part of gypsum, whence the name, is seen nearly due W., and is reached without difficulty by crossing a slight depression and mounting over snow-beds.

About 1½ m. N. of Platz is the hamlet of Dörfli, known elsewhere as *Davos Dörfli* (two tolerable Inns), prettily situated in the midst of green meadows, and but a short way from the *Davoser See* (5,121′), a mountain lake producing excellent trout. The way to Klosters is by a good new road on the W. side of the lake, which then mounts to a very low and easy pass, sometimes called *Laret Pass* (5,338′). The summit is reached at a solitary mountain inn called St. Wolfgang, and the descent, after passing a little dark tarn near which are the châlets of Laret, keeps due N. along the rt. bank of a mountain stream to *Klosters* (§ 34, Rte. D).

Route E.

COIRE TO DAVOS AM PLATZ, BY THE STRELA PASS.

4 hrs. to Langwies. 6 hrs. thence to Davos am Platz.

It has been seen, in the foregoing Rtes., that the drainage of the Davos valley, being poured into the Albula, and then into the Rhine, reaches Coire by a very circuitous course, fully three times the actual distance between that town and the head of the valley. The traveller may avoid that circuit, and enter Davos from Coire by a very direct course, through the populous valley of *Schanfigg*, and over the Strela Pass. The course here described lies through much agreeable and picturesque scenery, but the ascent from Coire is

long and becomes somewhat monotonous, so that it is probably a better arrangement, when praeticable, to take the pass in the opposite direction.

From the summit of the Strela Pass, the main branch of the Schanfigg valley, drained by the *Plessur*, falls due W. to the village of Maladers above Coire. It is one of the most populous in the Alps, being crowded with villages, hamlets, or scattered houses, perched on steep slopes at a great height above the torrent, especially on the northern sunny declivity. The mountains on either side are furrowed by many deep ravines, and the paths leading up the valley, and connecting the villages together, are forced to make many détours. This circumstance much increases the time necessary for reaching the pass, which looks deceptively near from the neighbourhood of Coire, but at the same time adds variety and interest to the scenery.

Those who would shorten the day's walk may reach the village of *Tschiertschen*, on the S. side of the valley, in a light char, in 2 hrs. from Coire, and continue their rte. by a footpath on the l. bank as far as Molins, where it crosses the Plessur and mounts to Peist. For pedestrians, the way along the N. side of the valley is to be preferred.

'The path mounts rapidly to the village of *Maladers* (3,287′), from which the col is plainly visible, but its apparent proximity is most deceptive. Thence the traveller's course is along the hill side, high above the rt. bank of the Plessur, making numerous long dips into the lateral ravines, and rising and falling perpetually. The path is well made, almost approaching the dimensions of a char-road, and carried mostly through luxuriant pine woods, which afford a grateful shade. When two or more paths diverge, it is safe, as a general rule, to take the lower or rt.-hand one. Passing through Castrel and St. Peter's, the village of *Peist* (4,383′) is reached in $4\frac{3}{4}$ hrs.' steady walking from Coire. There is a small inn on the l. hand side of the path, just above the public fountain, where two clean beds, scanty food, and fair red wine may be obtained. The carved inscriptions on the houses here are the best in the valley. It is a hot and shadeless walk of $1\frac{1}{4}$ hr. to *Langwies* (4,518′), the last village (with a poor inn), where, for the first time since leaving Coire, the traveller is on a level with the bed of the stream.'—[A. W. M.]

Here the Plessur is formed by the junction of several mountain torrents. The principal stream descends NE. from an upland glen nearly 8 m. in length, forming an acute angle with the course of the main valley. At the extreme SW. end of this glen, a wild and solitary ravine called *Welsch Tobel*, it is possible to cross the ridge, and descend upon Alveneu. There are also passes to the SE. leading to Frauenkirch by the *Mayenfelder Furka* (8,022′), and to Glaris by the Bären Tobel.

[In a lateral opening on the W. side of the Welsch Tobel is *Arosa* (6,208′), one of the highest hamlets in this part of the canton, where potatoes are still cultivated. Rough quarters for the night may be obtained at the house of Obmann Hold. Several mountain excursions interesting to the geologist and the botanist may be made from Arosa. The most interesting to the mountaineer is towards the SW. by two mountain tarns, the Schwelli See and Ælpli See, to the summit of the Schöne Bleise (9,794′), lying at the SW. extremity of the upland glen containing those little lakes. The adjoining summit of the *Parpaner Rothhorn* (9,518′) may be ascended, and the traveller may descend to Parpan, on the road from Coire to Lenz (Rte. A). Another excursion, which will well reward the botanist, is to the red sandstone summit of the *Sandhubel* (9,075′), on the E. side of the Welsch Tobel, reached through a recess in the hills called Teufenberg. It is easy to descend from the ridge to

Wiesen in Davos (Rte. D). To reach Coire from Arosa, the geologist may best ascend by the Sattel Alp to a summit called *Weisshorn* (8,701′), NW. of the village, and not to be confounded with a higher peak of the same name due E. of Parpan. Serpentine and dolomite are the prevailing rocks in the range NE. of Arosa, which is sometimes known by the collective name *Churer Alpen*.]

A little above Langwies a tributary of the Plessur descends from the NE. through a glen called Fundey, through which it is not difficult to reach Conters and Küblis in the Prættigau (§ 34, Rte. D). The way to Davos mounts about due E. from Langwies along the rt. bank of a stream descending from the pass, through wild and pleasing scenery.

'The path becomes vague in places, but it is not possible to go far wrong, and in 1 hr. the châlets of the Schmitten Alp are reached, where milk may be procured. From hence the track nearest the stream should be kept, until above the last châlets on the Haupten Alp, when it is necessary to cross to the l. bank, and the last ascent commences. This from below appears to be rather troublesome, but is, in fact, perfectly easy. The path is very faint, but sufficient to mark the way, which lies over steepish banks of shale, interspersed with patches of snow, until, in 2 hrs. from Schmitten, the *Strela Pass*, a broad ridge 7,799 ft. above the sea, is surmounted. The prospect, looking back right down the long smiling valley, backed by the mountains beyond the Rhein Thal, is pleasing, while in front there is an extensive view of the Scaletta and Albula Alps. The most conspicuous are, in front, the Weisshorn and Schwarzhorn beyond the Davos Thal, with the dark pyramid of the Piz Linard peering over them, and, on the rt., a fine snowy mass, probably the Piz Kesch, towering above a considerable glacier. The descent is straight forward and very gentle, as far as the Strela Alp, where a view is opened out down the Davos Thal, beyond the extreme end of which is seen a group of peaks, the chief of which—Piz d'Aela—bears a striking resemblance, on a small scale, to the Matterhorn.' [A. W. M.]

At the Strela Alp one path descends direct to Dörfli (Rte. D) and another bearing to rt. leads, chiefly through forest, in 1 hr. from the pass, to Platz.

Route F.

DAVOS AM PLATZ TO SÜS, BY THE FLUELA PASS.

New road, about 22 m. No public conveyance. Vehicles may be hired from the postmaster at Platz.

Three nearly parallel lateral valleys enter Davos near to the principal village, Am Platz, and each is connected with a pass leading into the Engadine. In each of them the torrent, which had flowed about due NNW, is bent to the westward as it approaches its junction with the Landwasser. Thus the stream from the Sertigthal (Rte. H), the westernmost of these valleys, is poured into the Landwasser at Frauenkirch. Next comes the Dischmathal (Rte. G), whose torrent enters the main valley a short distance above Platz, while that issuing from the glen called Fluela joins the Landwasser at Dörfli. The ridge dividing Fluela from Dischma, culminating in the Schwarzhorn, is a promontory from the mass of the Scaletta Alps. Hence it happens that the first of these glens leads by the Fluela Pass to the Engadine at Süs, while the line of the Dischmathal, Scaletta Pass, and Val Sulsanna, conducts the traveller by the S. side of the same group to Capella in the Engadine, fully 12 m. higher up in the valley of the Inn than Süs.

The new road over the Fluela Pass is a considerable short cut for travellers

from the North going to the Lower Engadine. It is announced that in the summer of 1873 a diligence will run direct from Landquart to Tarasp. See § 34, Rte. D.

The road enters the Fluela valley at Dörfli, and ascends, chiefly through forest, on the rt. side of the torrent. About 1½ hr. from Platz is a new rustic inn (Alpenrose?), and ½ hr. farther another very poor hostelry at Tschuggen, about half-way to the top. The remainder of the ascent is wild and rather dreary, the stream being crossed and recrossed several times.

The summit of the *Fluela Pass* (7,891′) is close to two small tarns, called Schotten See. Here is a little mountain inn, convenient for the ascent of the Schwarzhorn, now a common excursion. To the N. is a peak called *Fluela Weisshorn* (10,135′), to distinguish it from many other Weisshorns in the same district, separating the pass from the head of the Vereinathal (§ 34, Rte. D), while to the S. rises the Schwarzhorn (10,338′), which may be ascended from this side as easily as from Dürrenboden (Rte. G). The descent to Süs lies due E.; the road winds down a rather steep slope, keeping chiefly to the l. bank of the torrent, and passing a place called Bei den Kehren, feared for spring avalanches. Before long an alpine glen opens to the S., through which the torrent from the *Grialetsch Glacier* descends into the head of *Val Susasca*, as the valley is called that leads to Süs. Keeping to the l. bank, the road is joined, above half way down the Val Susasca, by the path descending Val Fless from the Vereina Pass (§ 34, Rte. D), and finally crosses to the rt. bank immediately above the village of Süs (§ 36, Rte. A). The traveller there finds a tolerable country inn, or may procure a vehicle with which to push on to the Baths of Tarasp.

Route G.

DAVOS AM PLATZ TO SCANFS, BY THE SCALETTA PASS — ASCENT OF THE SCHWARZHORN.

This is an uninteresting pass unless, as is quite possible, the ascent of the Schwarzhorn be combined with it; but it is useful, as affording the shortest route from Davos to the Upper Engadine. There is a char-road up the Dischma Thal to Dürrenboden; a drive of 2½ hrs., or walk of 3 hrs., thence over the pass to Scanfs in the Engadine is 5 hrs.' walking. For the ascent of the Schwarzhorn 4 hrs. must be added.

The *Dischma Thal*, which opens out to the SE., a little above Am Platz, is a long dreary valley, almost devoid of interest. It is closed at its head by the considerable mass of the Scaletta Glacier, which, with the dark obelisk of the Schwarzhorn on the E. side of the valley, will probably absorb the attention of the traveller.

Dürrenboden (6,644′) consists of a few huts, in one of which, more respectable than its neighbours, fair quarters for a night, and abundance of milk, may be had. Above this the valley forks. To the left, passing between the Schwarzhorn and the foot of the Scaletta Glacier, which comes down from the *Piz Vadred* (10,610′), lies the way by the rarely-traversed *Grialetsch Pass* to Süs in the Engadine: the ascent to it appears quite easy. The path to the Scaletta Pass keeps to the rt., over steep slopes of rock and shale, mounting rapidly until an extensive plateau is reached, which early in the season is covered with snow. The pass is seen straight in front, and to reach it there is a choice of two tracks; one, on the l. or W. side of the valley,

under the *Bocktenhorn* (10,038′); the other, on the rt. side, along the base of the cliffs supporting the Scaletta Glacier. The latter appears preferable, but by either a considerable tract of snow must be crossed before reaching the pass, 8,613 ft. in height, in 1¾ hr. from Dürrenboden. There is a small Berghütte, or refuge, on the summit, the appearance of which is the reverse of inviting. In neither direction is there much view; in fact few passes of the same height are so devoid of attraction. The descent into the Salsanna Thal is due S. over gentle slopes of shale varied with patches of snow, until the Fontana Alp (7,212′) is reached. From hence, by following the arm of the valley to the rt., Davos or Bergün may be reached by the Sertig Pass (Rte. H). The path to the Engadine turns sharp to the l., and leads by a rapid descent to the lower valley. The torrents from the glaciers of the Piz Kesch, on the S. side of the valley, are troublesome to cross when swollen. The *Val Salsanna* is a degree more interesting than the Dischma Thal, not being quite so bare of vegetation, but presents no features likely to detain a traveller. It is traversed by a good path, which, after passing through Salsanna (5,486′), the only village, falls into the great diligence-road, traversing the Engadine, at Capella, about 35 min. below Scanfs, which is reached in 3¼ hrs. from the col. Although the track from Dürrenboden to the Fontana Alp is ill traced, no guide is needed for this pass in clear weather. *Scanfs* (Inn: Traube) is noticed in § 36, Rte. A.

Ascent of the Schwarzhorn. The ascent of the Schwarzhorn (10,338′) may be made from Dürrenboden in 2¾ hrs. There are few points of the same elevation, accessible in so short a time, from which so gorgeous a panorama may be obtained, but the expedition is as yet little known. No guide is required by a practised mountaineer, for although the ascent from below looks awkward, it is in reality quite free from difficulty. 'Crossing the Dischma Bach, the steep grass slopes on its rt. bank are climbed, for 1 hr. bearing rather to the l. Then straight running should be made for a slight depression on the southern ridge of the mountain, considerably below the summit. Particular care should be taken not to endeavour to strike this too high, and so get too much under the actual peak, the western face of which is very precipitous, though quite accessible to a good cragsman. The rte. lies over banks of snow, succeeded by a steepish rock chimney, above which easy slopes of shale lead to the broad grat, looking down upon the Schwarzhorn Glacier and the track of the Fluela Pass. Turning to the l., this grat must be followed, until, after passing over alternate slopes of rock and snow which are neither steep nor present any other difficulty, the summit is reached. This is a very small rocky point, and falls away steeply on all sides, except that by which it has been approached. The view is of the most superb character, especially looking E. along the whole range of the Tyrolese Alps from the Œtzthal group to the Orteler; and S., where the great chain extending from the Bernina Pass to the Lake of Como is seen right opposite to the spectator, and therefore probably to greater advantage than from the better-known Piz Languard, where the same view is seen sideways, the great mass of the Bernina shutting out the rest of the chain. Of single peaks, the Piz Bernina, Piz Roseg, and Monte della Disgrazia are most conspicuous, the latter towering above the vast expanse of the Roseg Glacier. But the whole scene is indescribable, and must leave an indelible impression on the mind of every one fortunate enough to be favoured with a clear day. The descent to Dürrenboden may be effected in 1¼ hr.' [A. W. M.] The traveller must not confound the Schwarzhorn here described, which might conveniently be called Scaletta Schwarzhorn, with the higher peak of the same

name in the central group of the Silvretta Alps (§ 34, Rte. E).

The ascent of *Piz Vadred* (11,610′) is far more difficult than that of the Schwarzhorn. The second peak was reached for the first time by Mr. Freshfield; and the western point, higher by 30 ft., by MM. Hartmann and Fitch, in 1867. Starting from Dürrenboden with Jenni and Stiefel, a very active climber from the Dischmathal, they encountered no real difficulty until they reached the base of the highest peak, which involved two hrs.' of very stiff, if not dangerous, rock-climbing.

Mr. Girdlestone has effected a pass, suggested in the second edition of this work, from Dürrenboden to the Engadine by the Grialetsch and Sursura Glaciers.

Route H.

DAVOS AM PLATZ TO SCANFS, BY THE SERTIG PASS.

About 8½ hrs.' walking, exclusive of halts.

The Sertigthal is the most interesting in point of scenery of those leading from Davos to the Engadine. A rough char-road turns aside from that leading from Platz to Frauenkirch (Rte. D), and mounts along the rt. bank of the torrent to Dörfli (6,102′), the highest hamlet of the Sertigthal, about 2¾ hrs. from Platz. A little higher up the valley forks. One branch, called *Ducanthal*, mounts to SW. by the W. side of the *Hoch Ducan* (10,082′), to a pass between the Ducan range and the *Krachenhorn* (9,495′), whence the *Stulserthal* descends in the same direction to Bellaluna on the Albula road above Filisur (Rte. C). The other branch of the Sertig—the *Kühalpthal*—is that leading in about 4½ hrs. from Davos to the *Sertig Pass* (9,062′), lying immediately W. of the *Kühalpthalhorn* (10,125′). It commands a very fine view of the Piz Kesch and the great Porchabella Glacier on its N. slope. The ascent of this, the highest peak N. of the Engadine, long deemed inaccessible, is noticed in Rte. C. About ¼ hr. below the Sertig Pass are the Lakes da Raveischg, a group of small lakes occupying the summit level of a ridge connecting the head of *Val Tuors* with the *Val Sulsanna*. The way to the Engadine lies to the l. through the latter valley, while it is equally easy to reach Bergün on the road of the Albula by bearing to the rt., and reaching the char-road at Ponts d'Alp (Rte. C). The descent to Val Sulsanna is ill traced, but nowhere difficult, provided the traveller keep to the l. bank of the stream. On the opposite side, a considerable torrent from the Vadred da Porchabella enters the valley. In about 1½ hr. from the top of the pass the path joins that from the Scaletta Pass at the Fontana Alp, mentioned in the last Rte., and descends to Capella in the Engadine.

Route I.

BIVIO TO CASACCIA, BY THE SEPTIMER PASS.

4 hrs.' walking.—A paved bridle-track.

In the preceding Rtes. the mountain ranges and passes between the Rhine and the upper valley of the Inn have been described. It is now necessary to notice those lying between the Hinter Rhein and the Val Bregaglia. The last-named valley is orographically a continuation of the great line of depression marked by the valley of the Inn, but its waters, instead of being carried

through that river into the Black Sea, form the Mera, and help to fill the basin of the Lake of Como.

The *Septimer Pass*, connecting the head of the Oberhalbstein (Rte. A) with that of Val Bregaglia, is, next to the Splügen, the lowest and most direct of those connecting Lombardy with the Lake of Constance, and as before the construction of the present carriage-road by the Splügen, it was far the safer and easier of access, it became a frequented pass at an early period, and was certainly known to the Romans. But though only 79 ft. higher than the Julier, and shorter by fully 4 hrs., it has always been considered a less safe and easy pass, and more liable to be blocked up by snow in winter; it consequently never attained the commercial importance acquired by the rival pass. The track from Bivio (Rte. A) lies through *Val Cavreccia*, a treeless pastoral valley, that enters the head of the Oberhalbstein above that village. The way is at first along the l. bank, then on the rt. bank of a torrent descending from the range W. of the pass, and the ascent is throughout very gentle, in part over swampy ground. Before reaching the summit, a streamlet descending from the SE. crosses the path. This flows from the *Pizzo Lunghino* (9,121′), forming the SW. end of the range of Gravasalvas, not to be confounded with the much higher *Piz Lungen* (10,400′), at the NE. extremity of that range. The Pizzo Lunghino and the Pizzo Peseiora (§ 30, Rte. D) are the only single mountains in the Alps that feed streams flowing into three different seas. The streamlet above mentioned is one of the sources of the Oberhalbstein Rhine, and goes to the North Sea; the E. side of the Pizzo Lunghino supports a mountain tarn that is the highest of the sources of the Inn, flowing to the Black Sea; and the streams from its W. flank pass through the Mera and the Adda to the Adriatic.

The summit of the *Septimer Pass* (7,582′), reached in rather more than 2 hrs. from Bivio, is marked by a wooden cross, and a refuge, now fallen to ruin, erected for travellers by some former Bishop of Coire. There is a fine view to the S. of the peaks enclosing the Albigna and Forno Glaciers, culminating in the Cima del Largo (11,162′). The descent is more rapid than the ascent, as Casaccia lies more than 1,000 ft. lower than Bivio. The course is due S. until the track falls into an alpine glen, through which the principal source of the Mera descends due E. (nearly exactly contrary to its subsequent direction), to Casaccia, from a group of high peaks, whose highest summits are the Pizzo della Duana (10,279′) and Gletscherhorn (10,190′) (Rte. K). The rough-paved track descends in zigzags along the N. side of the Mera, and in less than 2 hrs. from the pass reaches

Casaccia (4,790′), described in § 36, Rte. A.

Route K.

ANDEER TO CASACCIA, BY THE AVERSTHAL.

The Aversthal penetrates deeply into the extensive mountain region lying between the Oberhalbstein and the Hinter Rhein, and unites the drainage of nearly the entire mass in the *Averser Rhein*, or Avner Rhein, which joins the Hinter Rhein a short way above Andeer (§ 31, Rte. A). Of the two passes here described, that of the Forcellina is free from difficulty, and the whole distance may be accomplished in one day by a moderately good walker. The way by the Duana Pass is more interesting, but should not be attempted without a guide, and is too long for a single day's walk. The scenery between Cresta and the mouth of the valley is of the highest order, and deserves to be more generally known by tourists. That portion of the way is quite unfit for horses,

the path being extremely rough, and in many eases broken through by the remains of bergfalls and avalanches.

1. *By the Forcellina Pass.*

	Hrs.' walking	Eng. miles
Canicül . . .	3	8
Cresta . . .	2¾	7
Juf	1½	4½
Casaccia . . .	3¾	9½
	11	29

For travellers going from Casaeeia to Cresta it is not impossible to take a horse as far as the latter village, but it would not be advisable to ride over some parts of the way between the Septimer and Juf. The ascent is very long when made from Andeer; travelling in the opposite direction, a fast walker may accomplish the entire distanee in 10 hrs. exclusive of halts.

After following the high-road for ¾ hr. from Andeer the path enters the valley of the Averser Rhein through a fine defile between bold rocks of crystalline slate under the shadow of ancient pine trees. Within ¼ hr. of the high-road is the first waterfall, a very picturesque object, well worth a slight détour from the way between Andeer and Splügen. Many other falls are passed higher up in the valley. The lower part of the Aversthal is often ealled *Ferrerathal*, and the first village, about 1 hr. from the valley, is *Ausser Ferrera*. Here are the remains of smelting works formerly employed in the reduction of a very rich iron ore found in the neighbourhood. Amidst very beautiful and varied scenery the path, keeping to the rt. bank, reaches *Canicül*—also called Inner Ferrera—4,856 ft. above the sea, a poor village very finely situated between the peaks of the *Surettahorn* (9,971′ and 9,925′) to the W., and the *Piz Starlera* (exactly 10,000′) to the NE. The latter fine mountain descends in a nearly vertical precipice of rock to the banks of the torrent below Canicül. SE. from the village is the Val Emet, leading to the Madesimo Pass (Rte. M). There is a very rough inn, kept by eivil people, at Canicül, and the pastor is willing to reeeive respeetable strangers in his house, which affords rather primitive accommodation. About ¾ hr. above Canicül two other lateral valleys join the Aversthal. Through one of these, ealled *Val Starlera*, it is possible to reaeh Molins in Oberhalbstein by a pass on the N. side of the *Weissberg* (9,987′), and the Val da Faller (Rte. A). To the S. is the opening of the more eonsiderable Val di Lei (Rte. L). About 1¼ hr. above Canicül is *Campsut* (5,499′), where the valley opens out a little, and gives space for some green meadows. Less than 1 m. farther is *Crot*, standing at the junction of the Madriserthal with the main valley. [There is a pass leading to Castasegna, from the head of the Madriserthal, as to which information is desired.] *Polemonium cæruleum*, and other rare plants, may be found in this part of the valley. A rather steep ascent leads from Crot to

Cresta (6,295′), the chief village of the Aversthal. The last lareh trees are seen near the village, and above this the valley is eompletely bare, although there are several hamlets, whieh are reckoned as the highest in the Alps and in Europe. The absence of trees is, however, to be attributed rather to reckless management than to the mere influence of climate, as in several adjoining valleys larch and Siberian fir (*arven*) extend nearly to 7,000 ft. above the sea. It has been said by many writers that the people here have no other fuel than cow-dung, and it is true that that article is preserved for firing; but wood is also procured from the lower part of the valley, though not without mueh labour, owing to the badness of the path, which is unfit for horses. The inn is uninviting; inferior to that at Canicül, but respectable travellers are received by the pastor. As a general rule, the traveller in this valley should carry such provisions as he may require. In fine summer weather he may ften find all the houses of a village shut up, and the people absent till nightfall, en-

gaged on the mountains in cutting hay, &c.

Above Cresta the valley rises very gently for several miles, being occupied exclusively by meadows and alpine pastures, with here and there a small patch of potatoes, turnips, or lettuce. Several hamlets or groups of houses, inhabited throughout the year, occur at short intervals. Before reaching Pürt, the first of these, a glen opens to the l. towards NE., and leads to the foot of *Piz Platta* (11,109′), the highest of the outlying peaks of this district, said to be accessible without much difficulty from this side. There is a difficult pass between it and the *Fopperhorn* (10,371′) leading to Molins. Beyond Pürt are Juppa and Podestatshaus (6,716′), and to the S. is seen the opening of Val Bregalga. Nearly 2 m. farther is the highest hamlet in the valley, and in Europe, called *Juf* (6,905′). From hence diverge the tracks leading to three passes that connect the head of the Aversthal with the neighbouring valleys. The lowest, easiest, but least interesting of these is that of the *Stallerberg* (8,478′), due E. of Juf, and leading to Bivio. Another, higher, steeper, and rarely used, lies about due N., between the Fopperhorn and *Piz Scalotta* (10,112′), and leads by Val Bercla and Val da Faller to Molins (Rte. A). The third, which is the direct way to Casaccia, is the *Forcellina Pass* (8,770′). The path to it from Juf mounts gradually towards SE. along the rt. bank of the torrent for nearly ½ hr., and then begins to ascend rapidly by zigzags to the l., after which it resumes its SE. direction along the face of the mountain, passing round some precipitous rocks, until it again bears to the l., and with little labour and no difficulty leads the traveller in ½ hr. from Juf to the summit. The view is extensive and interesting, the Bernina chain and the peaks S. of Val Bregaglia are the most remarkable objects. In the opposite direction the Tödi comes into view. On the E. side the path is scarcely traced, but the way is easily found in clear weather, care being taken not to bear too much to the l., and so descend on the N. side of the Septimer Pass. After passing an opening between steep rocks, the way to the Septimer Pass (Rte. I) lies over slopes of débris and snow. Casaccia is reached in 2¼ hrs. from the Forcellina. From the Septimer it is easy to reach in 1 hr. a col connecting Pizzo Lunghino with the Gravasalvas, and to descend thence in little more than 1 hr. to the high road near the Silser See.

2. *By the Duana Pass, and Val Duana.* The *Val Bregalga*, which, as mentioned above, joins the Aversthal fully 2½ m. above Cresta, affords the mountaineer a passage to Casaccia more interesting than that by the Forcellina. The way is somewhat intricate, and in great part trackless. From 7½ to 8 hrs., exclusive of halts, are required to reach Casaccia from Cresta.

After passing the hamlet of Bregalga (6,355′), near the entrance of the valley, the traveller mounts along the rt. bank of the torrent. Keeping due S., he finally reaches a small glacier lying W. of the *Gletscherhorn* (10,190′). This is traversed without difficulty, and on reaching the summit of the ridge (about 8,720′, R. C. N.), he looks over a slightly depressed rocky platean, or basin, usually in great part covered with snow. This is the head of a wild recess in the group of peaks whose highest point is the *Pizzo della Duana* (10,279′), and forms the head of Val Duana, which sends its torrent eastward towards Casaccia. To the rt. is a ridge dividing the snow-basin from the head of Val Ronda, one of the branches of the Madriserthal. Nearly due S. is a summit called *Marcio* (9,533′), with a small glacier lying on its N. slope, and E. of this a pass by which the people of Bondo in Val Bregaglia (§ 36, Rte. A) gain access to Val Bregalga and the Madriserthal. It costs the traveller but a short détour to make a circuit, partly

over rocks, partly over the glacier of the Marcio, to the top of the pass over Bondo, slightly higher than the Duana Pass—about 8,930′, R. C. N. This commands a remarkable view. 'Monte Rosa is seen on a clear day' [R.C.N.], but the most remarkable objects are the granitic peaks on the opposite side of Val Bregaglia. The way now lies a little N. of E. to a little tarn lying in the midst of the very wild glen called *Val Duana*. A stream, which is followed on the l. bank, leads to a second and larger lake (8,051′), and the way lies along its N. bank, avoiding a small glacier that descends on the opposite side from the Pizzo della Duana. This lake, which receives all the waters of Val Duana, has no visible outlet, but must be drained by some underground channel into the lower valley, sometimes called *Val Marozzo*, through which the head waters of the Mera descend to Casaccia. A very short ascent, followed by a long and steep descent, leads the traveller into this valley. He crosses to the l. bank of the torrent, and in 40 min. more joins the track of the Septimer, about ¾ hr. above Casaccia.

Route L.

ANDEER TO CHIAVENNA, BY THE AVERSTHAL.

The mountaineer going from the valley of the Hinter Rhein to Chiavenna, may take a course far more interesting than the high road of the Splügen, by ascending the lower part of the Aversthal, and then following either the Val di Lei or the Madriserthal to the passes which connect those valleys with Chiavenna. The distance is about the same as the way to Casaccia by the Forcellina (Rte. K), but the passes are much steeper on both sides. Further information as to the passes mentioned in this and the following Rtes. is much desired.

From the Surettahorn, E. of the Splügen Pass, to the Pizzo Stella, near Chiavenna, the ridge dividing the waters of the Rhine from those of the Adda follows a direction nearly due S., and then runs ENE. to the Septimer Pass. The consequence is, that whereas the watershed at the Splügen is much nearer to Andeer than to Chiavenna, the two above-named tributary valleys of the Aversthal penetrate southward to the ridge immediately overlooking the lower part of the Val Bregaglia.

1. *By the Val di Lei.* As mentioned in last Rte., the Val di Lei joins the Aversthal about ¾ hr. above Canicül, nearly 4 hrs. from Andeer. It is a long, straight valley, enclosed between high and steep, but monotonous slopes. The upper end, hemmed in by glaciers and snow-fields, is more interesting. At its lower end the peaks of the *Pizzo della Palü* (10,374′), and *Piz d'Emet* (10,502′) rise on the W. side, and three passes leading to the Val di S. Giacomo are passed on the rt. hand by the traveller ascending the valley. The way to Chiavenna is by a pass at the extreme S. end; and after passing the highest châlets, called Pian del Nido, the ascent lies by the E. side of a glacier descending from the *Pizzo Stella* (10,266′). On the traveller's left, dividing the head of Val di Lei from that of the Madriserthal, are the *Corno di Bläsi* (10,000′) and *Cima di Sovrano* (10,040′). In approaching the summit of the pass, the way lies on the W. side of the *Lago Ghiacciato*, a rather large mountain tarn, partly frozen even in summer, and then bears to the rt., a little S. of W., to the summit of the pass, 8,780 ft. in height. This may, for want of a name, be called *Passo del Lago*, as the nearest summit to the E. is called *Cima del Lago* (9,892′) After descending a short way, the course bears abruptly to the l., and keeps nearly SE., till it reaches the W. end of another lake, called *Lago di Acqua Fraggia*. A steep descent then leads to *Savogno*, a village not far from the high road of the Val Bregaglia, which

THE BERNINA ALPS.
English Miles
1
2
Pontresina
Muottas
Sagé
P. Rosatsch
Muottas
Alp pruma
P. Surlei
Alp segunda
P. Chalchagng
Mandra
Misauna
Tschierva
Margium
P. Morteratsch
Vadret da Morteratsch
Vadret Pers
Pers
Cave
Alp Morteratsch
Bernina Inn
Fuorcla
Tschuaier
la Pischa
P. Alborn
A. da Bondo
la Chavolezza
Pº Cambrena
P. d'arlas
Piz Bernina
Piz Palii
Vadret da Roseg
Piz Roseg
Il Caputschin
Roseg Pass
Sella Pass
Cresta Aguza
P. Zupo
Vadret da Palii
Piz Sella
Vadret da scerscen
M. Rosso
Pº di Verona
Vadret da Fellaria
P. Tremoggia
Val d'Entova
M. Nero
M. Fellari
M. Muscla
Passo Ro
A. Scerscen
I. Fellaria

is reached about 2 m. E. of Chiavenna (1,040′). See § 33, Rte. A.

2. *By the Madriserthal.* The Madriserthal, parallel to, and E. of the Val di Lei, leads to the *Passo di Val Madris* (8,793′), between the Cima del Lago and the *Pizzo Galleggione* (10,286′), whence, deseending WSW., the track passes along the S. side of the Lago di Acqua Fraggia, where it joins that from the Passo del Lago, mentioned above, and descends by Savoguo to Chiavenna. From Crot, where the Madriserthal joins the Aversthal, to Chiavenna, is said to be a walk of 7 hrs.; in all nearly 12 hrs., exclusive of halts, from Andeer. There is another way, described by Mr. Freshfield, with traces of an ancient paved path, leading to Promontogno in Val Bregaglia.

Route M.

ANDEER TO CAMPO DOLCINO, BY THE AVERSTHAL.

Excepting the first, the passes mentioned below are little known and rarely used. Information respecting all of them is desired.

1. *By the Passo di Madesimo.* This way is eertainly not longer than that by the Splügen road, but the pass is rather higher, and the way mueh rougher. It affords an agreeable variation on the ordinary route for those who have already seen the Splügen, enabling them to enjoy the fine seenery of the lower part of the Aversthal. At Canicül (Rte. K) the path to the Madesimo Pass turns aside from the main track up the Aversthal, and follows the rt. bank of the torrent, draining the *Val Emet.* Keeping a tolerably direct course SW. to the head of this glen, the track reaches the *Passo di Madesimo* (7,480′). In descending, the way lies somewhat to the rt., and passes on the N. side of a little lake, called Lago di Emet; then, leaning to the l., or SSW., it passes the hamlet of Madesimo, and reaches the high road of the Splügen, close to Pianazzo (§ 33, Rte. A).

2. *By the Val di Lei.* Few particulars ean be given as to the passes leading from the Val di Lei to the Val di S. Giaeomo. They lie in the following order, reckoning from N. to S. The *Passo di Val Sterla* (9,515′), on the S. side of the Piz d'Emet, joins the traek of the Madesimo Pass, above the hamlet of that name.

The *Passo Groppera*, immediately N. of the *Pizzo Groppera* (9,626′), leads to the same track, which is joined just below the hamlet of Madesimo.

The third is rather more interesting, and probably easier than the last, and may be called *Passo di Angeluga* from a group of châlets on the W. side of the pass bearing the latter name. It lies on the S. side of the Pizzo Groppera, and passes near to a number of small lakes or tarns lying on either side of the watershed. The lowest of these (about 6,900′) is close to the châlets of Angeluga. An abrupt, and rather steep, descent leads down to the level of the *Rabbiosa* torrent, fed by the snows of Pizzo Stella. The way lies along the rt. bank of the torrent till, after passing the hamlet of *Fraciscio*, it crosses to the opposite side, and bearing somewhat to the l., leads the traveller to the high road just above Campo Dolcino.

The Angeluga ehâlets are the most convenient starting point for the ascent of the *Pizzo Stella* (10,266′?). The ehief herdsman, named Giacomo dell' Adamino, is a competent guide, but a praetised mountaineer will easily find the way, bearing to the rt. during the aseent, and striking the ridge some way S. of the highest point, whieh is marked by two stone men. 3½ hrs. suffiee for the ascent, and 2½ hrs. for returning to the ehâlets.

By some mistake, the figures 3,406, indicating a height of 11,175 ft., are inserted in the Swiss Federal Map at a point SW. of the true summit on the Italian side of the watershed.

SECTION 36.

BERNINA DISTRICT.

It is but of late years that the importance of the portion of the alpine chain lying between the upper valley of the Inn and the Val Tellina has been generally recognised. The survey for the Swiss Federal Map proved that the peaks of this range had been previously rated too low by thousands of feet. The Piz Bernina does not quite equal in height the Pointe des Ecrins or Grand Paradis, but considering the number and height of the peaks, and the size of their glaciers, the Bernina Alps are certainly entitled to rank as equal in importance to the Dauphiné and Graian groups, and inferior only to the two greatest masses —the Pennine and the Bernese ranges.

Attention has already been called to the line of depression extending from Chiavenna into the Tyrol, chiefly occupied by the upper valley of the Inn. In the two foregoing sections, the ranges lying on the N. side of the great Rhætian valley have been described. The loftier masses to the S., between the Inn and Mera on one side, and the Adda on the other, may collectively be included under the designation Bernina District, although this comprises three groups which are in a great degree orographically distinct. The western group, lying between the Mera and the Adda, includes the high peaks that enclose the head of Val Masino, whose principal summit is the Monte della Disgrazia (12,074′). This is separated by the Val Malenco and the Muretto Pass from the central group of the Bernina Alps, whose highest summit attains 13,294 ft. To the E. and NE. the latter group is limited by the line of depression followed by the high road of the Bernina Pass, and beyond this extends a tract including several mountain ridges that lie between the Bernina Alps and the Orteler group. These are not sufficiently important to be described in a separate section, and are therefore included here. The most natural division between this and the Orteler district appears to be the line of valley between Zernetz and Bormio, taking the low pass which connects the source of the Adda at the head of Val Fraele with the valley of the Spöl descending to Zernetz.

Although the scientific geographer attaches no especial importance to the line of demarcation between the waters flowing to the Adriatic through the valley of the Po, and those that pass into Germany through the Rhine or the Inn, this is usually regarded as defining the main chain of the Alps. According to this definition, the main chain extends from Chiavenna along the N. side of Val Bregaglia, then crossing the low ridge of the Maloya, runs southward between the glens of Ordlegna and Fedoz, by the E. side of the Muretto Pass, to the Piz Guz (11,066′). The dividing ridge between the Adda and the Inn then follows a tolerably direct course to ENE., including several of the chief summits of this district, such as Piz Tremoggia (11,326′), Piz Roseg (12,936′), Piz Bernina (13,294′), Piz Palü (12,835′), and Piz Cambrena (11,835′), above the Bernina Pass. E. of that limit the same direction is preserved in the range whose highest summits are the Corno di Campo (10,843′), Monte Zembrasca, and Monte Foscagno (10,148′). The political boundary between Switzerland and Italy descends on the S. side of the watershed through the valley of Poschiavo nearly to Tirano, and in the Val Bregaglia to Castasegna, 6 m. from Chiavenna.

The best head-quarters for mountaineers desiring to explore the peaks and glaciers of the Bernina Alps are found at Pontresina, but Samaden and St. Moritz, when not over full, also afford good accommodation in the same neighbourhood. In the valleys opening toward Val Tellina the village inns are usually uninviting, but at the Baths of Masino very fair quarters are found by a traveller who would ex-

plore the grand scenery of that neglected valley. The Baths of Tarasp (4,182′) in the Lower Engadine, and those of Le Prese (about 3,200′), near Poschiavo, are good stopping-places, but less attractive to the mountaineer than those above named.

It may be well in this place to notice the existence of a singular class, whose presence in the Engadine and Val Tellina, and in their lateral valleys, cannot fail to attract the notice of the mountaineer. Throughout this district the ordinary practice of the *communes* is to let a considerable part of the mountain pastures, or alps, to Bergamasque shepherds, who annually drive vast flocks of sheep from the meagre slopes of their native valleys to fatten on the richer and more nutritive vegetation of the higher mountains. Their course usually is over some of the passes mentioned in § 38, by which they descend into Val Tellina, and then, by the Bernina Pass, and various mountain tracks, reach the huts where they pass the summer months. These Italian shepherds are a wild-looking race, with limbs swarthy as the Bedouin, high conical hats, and clothing chiefly made of sheep or goat skin. They speak a Lombard dialect, sounding strange to the ear of a stranger; but, though rough in appearance and speech, they are usually honest, kindly, and hospitable people, used to a hard life and sparing diet, chiefly composed of polenta and water from the nearest stream. One consequence of this system is that horned cattle are much less common than elsewhere in the Alps, and the mountain wanderer cannot here count with any certainty on finding the excellent milk, butter, and cheese that are usually obtainable in an Alpine châlet.

It has appeared most convenient to include in this section the description of the main roads through the Engadine and the Val Tellina.

Visitors to the Engadine should know that a bank is now open during the season at St. Moritz.

Route A.

CHIAVENNA TO NAUDERS, BY THE VAL BREGAGLIA AND ENGADINE.

	Post leagues	Eng. miles
Castasegna	2½	7½
Vico Soprano	2	6
Casaccia	1½	4½
Silvaplana	3½	10½
St. Moritz	1½	4½
Samaden	1	3
Zutz	2⅓	7⅓
Zernetz	3½	10½
Lavin	2	6
Schuls	3¾	11¼
Remüs	2	6
Martinsbruck	2	6
Nauders	1¼	3¾
	29	87

Diligence daily between Chiavenna and Samaden, and between Samaden and Nauders. At Samaden a char to Chiavenna may be hired for 30 fr.

The high-road leaves the town of Chiavenna (§ 33, Rte. A) close to the Hôtel Conradi, and at once enters Val Bregaglia, a very fine valley that within a distance of 15 m. descends from the Maloya Pass through a vertical height of about 5,000 ft., passing from the region of alpine pastures to the Italian climate and vegetation of Chiavenna, which is but 1,040 ft. above the sea. After passing on the l. a pretty cascade fed by a stream descending from the Lago di Acqua Fraggia (§ 35, Rte. M), the traveller keeping to the road on the rt. bank, sees opposite to him the site of *Piuro* (Rom. Plurs), a town of considerable wealth and importance, which was overwhelmed by a bergfall in September 1618. The rocks and rubbish lay so deep that nothing has ever been recovered from the ruins but a church bell and two lamps. A chestnut wood now clothes the site, and conceals even the traces of so great a disaster. The Swiss frontier is passed before entering

Castasegna (Inn: Post), 2,362 ft. above the sea. This is the limit of the cultivation of the vine and mulberry. A steep and narrow ravine on the S. side of the Mera, or Maira, leads by the Forcella di Rochette to the head of

Val Codera, and to Val Masino (Rte. F). At Spino, about 2 m. above Castasegna, a bridge over the Mera, on the rt. of the road, leads to *Bondo* at the opening of the *Val Bondasca*. The glacier at its upper end is enclosed by a range of very fine granitic *aiguilles*, and well deserves a visit, even by those who do not attempt to traverse the ridges that enclose it. A few hundred yards farther the high-road crosses the Mera to *Promontogno* (2,687′), with a pretty good country inn kept by a widow Curtabat. On a plateau above the rt. bank of the river, opposite Bondo, is *Soglio* (3,340′), once one of the principal seats of the powerful family of Salis, and still containing an extensive villa and gardens. It is said that near to this village the Siberian pine and the chestnut may be seen growing side by side, an association scarcely to be found elsewhere in the Alps. Above Promontogno the valley is contracted to a picturesque defile below the ruined stronghold of Castelmur, where access to the upper valley was once guarded by a gateway. Above this the villages of Stampa and Borgonuovo are passed before reaching

Vico Soprano (3,566′), the chief village in the valley, with a fair inn kept by the Landammann Maurizio. A stone bridge leads to the rt. bank of the Mera, but the road keeps to the l. bank of the stream. The torrent from the Albigna Glacier enters Val Bregaglia about 2 m. E. of Vico Soprano, but flows parallel to the Mera, not joining that stream till it reaches the village. An excursion to the Albigna Glacier may be strongly recommended to those who do not undertake the somewhat laborious Passo di Zocca, described in Rte. F. A rather steep ascent leads from the plateau, extending some way above Vico Soprano to the upper level of the valley where stands the last village,

Casaccia (4,790′), with three small and humble inns. Those of Bartolomeo Gioannini, and Agostino Zuan, have both been rather well spoken of, and there is a third kept by Stampa. Pietro Torriani is recommended as a guide to the neighbouring passes. Here is the junction of the paths from the Muretto Pass (Rte. G), and those from the Septimer, Forcellina, and Duana Passes (§ 35, Rtes. I and K). The ascent from Casaccia to the *Maloya Pass* (5,942?) is easy to the pedestrian, but it requires a good many zigzags to reach the low broad ridge from whence the streams fall on the one side to the Adda, and in the opposite direction to the Inn. An unattractive mountain inn stands at the summit. Between the Col des Échelles, near Bardonnèche, and the Tyrolese passes from the Inn to the Adige, this is the lowest point in the range of the Alps forming the natural frontier of Italy; but, as has been seen in the last section, it is necessary to traverse the Julier or some other higher pass, in order to reach the valley of the Rhine or the N. of Switzerland. The view towards the Val Bregaglia is more striking than that over the head of the Engadine, where rather gentle and monotonous slopes of bare green alpine pasture detract from the effect that would otherwise be produced by the high peaks on either hand. The descent is extremely slight, in fact quite insignificant, as the pass is but a few ft. higher than the *Silser See*, or Lake of Sils, the largest in the Alps lying at so great an elevation, 5,887 ft. It is fully 3 m. long, and 1 m. in breadth. The ruins of an ancient castle (Chasté) stand on a promontory of rock, at its eastern end. The road is carried along the N. shore, at the base of the Gravasalvas range, while on the opposite side two valleys descend towards the lake. The first is the *Val Fedoz*, leading up to the *Vadred da Fedoz*, a considerable glacier on the N. side of the *Piz Güz* (11,066′). Farther E. is the Val Fex, leading to the Capütscha Pass. The stream from this valley has brought down a mass of detritus, which it has spread out in a sandy plain (where the botanist may gather *Juncus*

arcticus), at the ENE. end of the Silser See, dividing it from the *Silvaplaner See*. It is evident that these lakes were once continuous, and that a single sheet of water extended nearly 9 m. through the head of the Engadine to Campfer. On the flat tract beyond the lake of Sils, but on the side of the stream opposite to the high-road, is *Sils*, and near to it, *Maria*. These, which are the highest villages of the valley, are marked by the air of neatness and comfort, that will strike the traveller throughout a great portion of this rte. At a large white house in the village of Maria is an excellent new inn, where visitors are received *en pension*. There is, or was, another smaller inn at the Post Office. This would be a convenient stopping place for a traveller wishing to explore thoroughly the adjoining Val Fex, which offers many attractions to the naturalist. For passes to Val Malenco see Rte. H. The excursion to the Salatschigna Joch is noticed hereafter.

The *Engadine*—by which name the Swiss portion of the valley of the Inn is generally known — deserves some special notice, as it is one of the most remarkable valleys in the Alps. There is none other which maintains nearly so great an elevation, for we here find that in a distance of 30 m., from the head of the valley to near Zernetz, the level of the Inn does not fall more than 1,000 ft. This fact, added to the influence of the snowy ranges that wall it in on either side, makes this the coldest of the greater valleys of the Alps. Beyond small patches of garden vegetables, there is no tillage in the upper valley, and nature provides no other resource than pasture for cattle by which to support the population. Observing these conditions, the stranger sees with surprise a large number of considerable villages, and a style of building announcing the possession of comfort, and even wealth, on the part of many of the inhabitants. A large part of the younger population is used to go forth into the world with a view to find a living; but this would not suffice to account for the condition of the people, if it were not that they are in hereditary possession of a trade which they exercise with extraordinary success throughout the many countries to which they carry their industry. Most of the Swiss confectioners and sugar bakers who are to be found in every large town on the Continent come from the Engadine, and there are few of them who do not realise a competence, and return with their savings to their native valley. Cut off from their Swiss neighbours by mountain ranges that are not easily passed except in the height of summer, and bordering on Tyrol at the lower end of the valley, and on Italy in the contiguous Val Bregaglia, the Engadine people are at once isolated and citizens of the world. It thus happens that they have maintained unchanged their own peculiar dialect of Romantsch (in which three or four periodical papers are published), and many local usages, while many of them are well acquainted with remote parts of Europe visited during their period of emigration. The Engadine is naturally divided into two distinct portions, the Ober Engadin, or upper valley, extending from the Maloya to the neighbourhood of Zernetz, and the Unter Engadin, stretching thence to the Tyrolese frontier below Martinsbruck. The conditions above described apply especially to the upper valley. In the lower valley the climate is less severe, and tillage is possible wherever the steep slopes allow room and soil for the purpose. But the Inn here runs through a deep trench between the opposing bases of the mountains, and the villages are often perched at a great height above the stream. The lateral valleys of the lower Engadine are for the most part narrow clefts whose precipitous slopes are clothed with the primæval forest, which still harbours the bear and many other wild animals, while the Lämmergeyer finds a home in the unfrequented crags of the alpine

region. Within the last few years the attention of many Swiss and other writers has been directed to this region, and several works, enumerated in the Introduction to this volume, have helped to increase the concourse of tourists, who have begun to make this one of their favourite haunts. Unlike what commonly happens elsewhere, the construction of a carriage-road through the upper part of the Engadine was an easy undertaking, while much labour and heavy expense have been absorbed in the continuation of the road through the lower valley. The new road, a great improvement on the old line, so steep and rough as to be scarcely passable for carriages, is now open to the Swiss frontier at Martinsbruck, but the road thence to Nauders is not in good condition.

Leaving to the rt. the little village of Sils, the road is carried along a dead level, and joins that of the Julier (§ 35, Rte. A) at

Silvaplana (two country Inns), on rising ground overlooking the *Silvaplana See*, the natural continuation of the lake of Sils. The silt and gravel borne down by mountain torrents have encroached on the basin of this lake, and will ultimately divide it into two parts. These lakes abound in fish, although they are usually frozen over for five or six out of the nine months' winter of this bleak district. The interesting walk to Pontresina by the Surlei Fuorcla is noticed in Rte. B. A new road, traversed by the diligence, crosses the river below the lowest lake, and goes to the Baths of St. Moritz, while the main road to Samaden, by the village of St. Moritz, keeps to the l. bank passing the pretty village of *Campfer* (Inn: H. Julier, good), ½ hr. below Silvaplana. The Siberian pine (arolla) becomes abundant above the

Baths of St. Moritz. The mineral springs, which have created a frequented watering-place in a position very unattractive to the lovers of ease and luxury, are at the base of a ridge projecting from the Piz Surlei (10,455′), near the SW. end of the *St. Moritzer See*, 5,804 ft. above the sea. The waters are highly charged with alkaline salts, and carbonate of iron, with a small proportion of phosphoric acid, and traces of iodine, bromine, &c. Their influence, along with that of the mountain air, is said to be extremely efficient in cases requiring tonic treatment. They are annually visited by an increasing number of Italian, German, and English visitors, and the numerous inns near the springs are overcrowded throughout the ten or twelve weeks in which delicate persons are recommended to take the waters. A very large new building, intended to receive four hundred visitors, was opened in 1864. In a fine summer season the climate is highly enjoyable, though rather cold at night; but visitors should be prepared for inclement weather, and snow not rarely falls in the month of August. The village of St. Moritz (6,100′) stands on rising ground, about 300 ft. above the baths, and rather more than a mile distant. Many of the patients lodge here. There are several inns, of which the most frequented is the Hôtel Culm (formerly Faller), kept by M. Badrutt—board, 5 fr. a day without wine, rooms from 2 to 5 fr. daily. Next to this rank in succession Hôtel Bavier; Kreuz, kept by Denz; Post; Aquila Nera. Lodgings may be had in private houses. Very general complaint is made that the food at all the inns here is inferior in quality and scanty. Nevertheless they are generally crowded, and travellers who have not secured rooms in advance should be prepared to go on to Samaden or Pontresina. Most of the excursions usually made from those places may be taken from St. Moritz; and good roads make it easy for ladies to reach comparatively distant points in the valley. Of the nearer walks the most interesting are those up the slopes N. of the village, commanding views of the higher peaks of the Bernina. The châlets of Nova and those of Giop are often visited, but

the best view is from the summit of the Margums Alp (7,766′), on the ridge overlooking Val Cellerina, which may be reached in rather more than 1 hr. The summit of *Piz Nair* (10,040′), at the W. extremity of the same ridge, is attainable without difficulty in 3 hours' steady walking from the village. The tour of Val Bevers (Rte. C) may be made by passing on the S. side of the Piz Nair to the little lake at the head of Val Suvretta. A very pleasing and easy walk to Pontresina is by the S. side of the St. Moritzer See to the châlets of Acla, where coffee, cream, butter, &c. are provided for visitors, and then by a little mountain tarn called Statzer See, near to which grows *Drosera longifolia*.

One of the most interesting excursions from St Moritz is that to the valleys of Fex and Fedoz, connected together by the Salatschigna Pass. The tour would be shortened by starting from the hamlet of Maria, but a char may be taken not only to Maria but for nearly 3 m. farther, as far as the châlets of Curtins in the Val Fex, and may await the traveller's return at Maria or Cresta.

On leaving Maria the char-road into Val Fex ascends nearly 500 ft. in order to gain the floor of the valley, which extends nearly at a level for fully 2 m., passing by the hamlet and picturesque chapel of Cresta to Curtins. The traveller then follows a path by the châlets and dairy establishment of the Silser Alp (6,759′), considered one of the most perfect in Switzerland, and, following the main track up the valley for some distance farther, leaves on the l. the path to the head of the valley, and ascends up grassy slopes towards the rocky ridge dividing this from Val Fedoz. The *Salatschigna Pass* lies well to the l. of a remarkable rock, resembling in its outline a cat *couchant*, and is a gap in a sharp indented ridge, commanding very fine views of the Fex and Fedoz Glaciers. The first is seen backed by the Capütschin, and the course taken over the Capütschin Pass (Rte. H) and the Fex Fuorcla (Rte. C) may be traced from hence.

[The route from Pontresina to Chiesa may be easily joined by any one starting from Maria or St. Moritz and crossing the Capütscha Pass, connecting the Fex and Scerscen Glaciers. It affords the only direct way from either of those places to Val Malenco.]

The *Val Fedoz* offers grander and more impressive scenery than the Val Fex, and the *Piz Margna* (10,355′), rising on its W. side, is a striking object. The descent into it is steep; the usual course lies somewhat l. of the pass; but it is also possible to keep down steep slopes on the rt., which lead to a goat track. 'This skirts the ridge for a considerable distance, but ultimately turns downwards, and led us to the foot of the rocks after 2½ hrs.' hard work. A further walk of 1 hr. along the stream brought us to the opening of the valley. Leaving the torrent to find its way by a fine fall to the level of the main valley above Isola, we turned to the rt. over moist meadows, and rounded a grassy brow, with lovely views of the Silser See, till we rejoined our morning rte. near Cresta, and ½ hour's rapid descent brought us back to Maria.' [J. F.]

The high road from St. Moritz traverses the small villages of Cresta and Cellerina, separated only by the torrent issuing from *Val Cellerina*. Here a road turns to the rt., crosses the Inn, and passing by the ancient church of St. Giann, leads in less than 4 m. to Pontresina (Rte B). The main road along the l. bank leads to

Samaden (Inns: Hotel Bernina, a good house and well situated; H. des Alpes, new, not bad, arrangements imperfect; Engadine Hof, large new house; Krone, fair and reasonable; Post, old-fashioned and primitive, cheap), the principal village of the upper Engadine, 5,608 ft. above the sea, with many large houses, inhabited by persons retired from business. This remote village has much the air of a town. It has three or four *cafés*,

a weekly political newspaper, and other periodicals. Lechner's *Piz Languard und die Bernina Gruppe*, sold here, will enable practised walkers to dispense with a guide for the ordinary excursions Most of these are best made from Pontresina (Rte. B), but the *Piz Padella* (9,459′), immediately W. of the village, and easily accessible in 3 hrs., is best visited from hence. The ascent of *Piz Ot* (10,660′) is more laborious, but it has been made easy, even for timid people, by a good path, with a hand-rail in steep places. As compared with the Piz Languard, this affords more interesting rock scenery; but the higher peaks are more distant, and the grand view of the Morteratsch Glacier is here wanting. The low summit called *Muottas* (8,273′), commanding a noble view, may be taken on the way to Pontresina. The church of St. Peter, the oldest in the Engadine, 300 ft. above Samaden, deserves a visit for the fine view over the valley. The neighbourhood of Samaden and St. Moritz abound in objects of interest to the naturalist. In addition to some special localities hereafter noted, the botanist may find in the main valley *Androsace septentrionalis*, *Linnæa borealis*, *Phaca frigida*, *Dracocephalum Ruyschianum*, *Carex Buxbaumii*, *Kœleria hirsuta*, and many other rare plants. The zoologist will have no less ample occupation. Amongst many other rare Lepidoptera, he may take *Chelonia flava*; and in the lake of St. Moritz he will find *Lymnæus Blauneri*.

The road from Samaden is carried along the level floor of the valley to *Bevers*, at the opening of the valley of the same name described in Rte. C. A schoolmaster named Krättli, who is well acquainted with the very rich local flora, sells, or did sell, good collections of dried plants. Abont 1 hr. farther is

Ponte (Inns: Hotel Albula, new; Krone, the old house, with tolerable rooms), at the junction of the track from the Albula (§ 35, Rt. C) with the road of the Engadine. As the name indicates, there is here a bridge over the Inn, but the road now keeps all the way to the l. bank. To the rt. lies

Campovasto (5,581′), also called Camogask, at the opening of the *Val Chiamuera*, or Camogaskerthal, which with its two lateral branches penetrates deeply into the mountain ranges separating the Inn from Val Livigno (Rte. M). The main central branch runs SSE., and is connected by a pass on the W. side of the *Piz della Stretta* (10,197′) with the head of the Val del Fain (Rte. B). A SE. branch, called *Val Lavirum*, leads by the *Lavirum Pass* (9,249′) to the Federia branch of Val Livigno. On the other side is the *Val Prunas*, mounting SSW. to the E. foot of Piz Languard.

Scarcely 1 m. beyond Ponte there is another bridge over the Inn at *Madulein*, a village standing under the castle of Guardaval, ruined in the 14th century in an outburst of popular fury, when a peasant of the valley had first slain the local oppressor to defend his daughter's honour. A torrent here descends from Piz Kesch (11,211′) through the *Val d' Eschia*. That fine peak was first reached in 1864, as mentioned in § 35, Rte. C. The head of Val Tuors (§ 35, Rte. C) may be reached from Val d'Eschia by the *Eschia Pass* (9,347′, B. Studer). About 2 m beyond Madulein is

Zutz (Inn: Schweizerbund, new, and well spoken of). The *Piz Griatschouls* (9,754′) is easily ascended from hence, and is said to command a fine view. On the N. side it overlooks the Val Sulsanna. The next village is

Scanfs (Inns: Traube, very small; Kreuz). A little lower down is the opening of Val Casanna (Rte. M). There are here fine views of the Piz Kesch to the W., and *Piz d' Esen* (10,269′) and *Piz Quatervals* (10,358′) to the E. At Capella the paths from the Scaletta and Sertig Passes (§ 35, Rtes. G and H) descend through Val Sulsanna to join the road. At *Cinuschel* (5,302′) there is a poor Inn, and a little farther—nearly 2 hrs. from Zutz—the road crosses a torrent de-

scending from Piz Vadred by a bridge called *Pont Auta*. This forms the political boundary between the Upper and Lower Engadine, but the natural limit is 3 or 4 m. lower down the valley, where the road, after crossing to the l. bank, makes a rather rapid descent just above

Zernetz (Inns: Bär, new; Löwe, kept by J. Fili, who has killed many bears and chamois on the neighbouring Alps; Steinbach). The village is much improved of late years, since a good road has connected it with the head of the valley. Here the Spöl, uniting the torrents from many mountain valleys into a considerable stream, enters the Engadine from ESE., while the Inn is forced aside from its direct course by a considerable mass of mountains whose highest point is *Piz Nuna* (10,263′). The village, one of the most important in the Engadine, stands at 4,912 ft. above the sea, on a tongue of land below the junction of the Spöl, and in the angle between it and the Inn. An excursion into Val Cluozza will interest the lover of wild scenery. The road returns to the l. bank of the Inn on leaving Zernetz, and keeps that side of the valley till it reaches the Tyrolese frontier at Martinsbruck. The way to Süs lies through a narrow and picturesque defile commanding at some points a fine view of Piz Linard. The steep walls of the valley are broken through at one point where a torrent descends from the *Sursura Glacier* on the E. side of the higher peaks of the Scaletta Alps. A fine pass from Davos to Süs by the Dischmathal and the Grialetsch and Sursura Glaciers, was effected by Mr. Girdlestone. See § 35, Rte. G.

(*Süs* with two small tolerable inns) stands in a picturesque position at the junction of Val Susaca with the main valley. By that way the valleys of Davos and Prættigau are connected with the Engadine by passes described in § 34 and 35. The lord of a castle, who surrendered to the people when they rose against their oppressors, was faithlessly murdered by them after he had a promise of safe-conduct. From that day forth—say the people of Süs—no lark has ever sung over the ruins. Steep rocks of hornblende slate rise above the road, and the opening of the wild Val Sagliains is passed on the l., as the road approaches

Lavin (Inn: bei Jacob Juon, poor but civil people), 4,782 ft above the sea. For the ascent of Piz Linard, the highest of the Silvretta Alps, which rises in a very bold peak between Val Sagliains and Val Lavinuoz, see § 34, Rte. E. The *Piz Miezdi* (9,593′), S. of Lavin, may be reached without difficulty by a moderate mountaineer, and will reward him by a very fine view of the Silvretta Alps. Below Lavin the valley of the Inn is everywhere so contracted as to leave little or no space near to the stream, and nearly all the villages stand at a considerable height on steep slopes, often separated by furrows or ravines cut into the mountains by torrents. This has made the construction of a road difficult and expensive. It is necessary either to descend into the depths of the valley in order to ascend again, or else to carry the road round projecting ribs of the mountain, and over deep rocky ravines. The new road passes below *Guarda* (5,413′). It has a clean inn (Sonne), and commands a fine view. The pedestrian may reach it by the old road, and then redescend to cross a ravine. In 2 hrs. from Lavin the traveller reaches *Ardetz*, a village beside the ruins of the castle of Steinsberg. The road now descends near to the bank of the Inn, and passes the opening of Val Tasna leading to the *Futschöl Pass* (§ 34, Rte. H). The castle of Tarasp and the houses of the adjoining hamlet of Vulpera are now seen on the opposite bank of the Inn, and the pedestrian may reach them without delay. The old char-road here mounted the steep projecting ridge on which stands *Fettan*, and then at once began to descend: but the new road avoids

Fettan, and in about 5 m. from Ardetz reaches

Schuls (Inns: Pension Belvedere, very good; several others of humbler pretensions, kept by Wieland, Peer, Arquint, &c.). This place has lately come into notice owing to the discovery of two powerful alkaline and chalybeate springs, but still more because of the increasing reputation of the neighbouring waters of Tarasp, to which place visitors are conveyed by omnibus several times daily.

Most travellers will turn aside to visit the mineral springs of *Tarasp*, as the place is generally called. The rather primitive inns formerly kept here by Steiner and Karl, are in some degree superseded by the opening of a large, new, handsome hotel. The hamlet where the more important springs have been discovered is properly called Vulpera, but the name of the commune is Tarasp. It is the only one in the Engadine where the people are Roman Catholic, and speak German instead of Romantsch. The waters here resemble those of Schwalbach and Pyrmont, but are said to be more powerful. There is little other resemblance between this place and those unattractive spots. The scenery of the immediate neighbourhood is here very fine, and there is ample occupation for the lover of nature in exploring the adjoining valleys. The principal establishment stands at 4,182 ft. above the sea, and enjoys a much milder climate than that of St. Moritz.

Of short walks, one of the most frequented is that to the castle of Tarasp, an ancient pile which has passed into the hands of M. Planta of Samaden, a distinguished member of one of the most distinguished families of this part of Switzerland. The village of Tarasp adjoins the castle. No stranger should omit to visit the *Moffette*, within $\frac{1}{4}$ hr. of Schuls, near the old road to Fettan. The name is given to two orifices through which carbonic acid gas, mingled apparently with sulphurous acid, issues in such volume that insects, mice, and small birds approaching the place fall dead. A man walking upright scarcely feels any inconvenience, but on stooping the respiration is immediately affected. The remains of small animals are usually to be seen in abundance about the spot, which is bare of vegetation for a considerable space. There are many longer excursions, which will afford occupation to the mountaineer. On the N. side of the Inn the *Val Clozza*, opening at the village of Schuls, leads up to the E. base of the *Minschun* (10,076′). A southern peak of this mountain, 9,147 ft. in height, is easy of access. The Editor has no notice of the ascent of the higher summit. On the E. side of Val Clozza is *Piz Chiampatsch* (9,580′). The summit, reached in 4 hrs. from Schuls, is said to command the finest general view of the Lower Engadine. An excursion to the head of Val Tasna (§ 34, Rte. H) would lead through fine scenery. The mountain ranges on the S. side of the Inn are probably more attractive than the granitic mountains to the N., but they have been little explored. The higher peaks consist in great part of dolomite, and serpentine is present in large masses. One of the highest summits is the *Piz Pisoch* (10,427′), immediately S. of Tarasp. Towards the SW. is a considerable group of peaks, little exceeding 10,000 ft. in height, but supporting a large glacier called *Vadret Lischanna*, which may be reached through a short glen called Val Lischanna. W. of Tarasp the *Val Plafna* flows from the S. into the Inn, while the far more considerable *Val Scarla* (§ 37, Rte. K) follows a parallel course, and opens into the main valley close to Vulpera. By one of the lateral branches of this valley, called Val Minger, it is easy to reach the head of Val Plafna across a rather low pass (7,628′), and so return to Tarasp. Several rare minerals have been found in the lower part of Val Scarla, and many interesting objects doubtless await the naturalist who will explore

its recesses. Among other rare plants found in this neighbourhood may be mentioned *Linnæa borealis*, *Cortusa Matthioli*, and *Cypripedium calceolus*.

The new road from Schuls is carried along the l. bank of the Inn, below *Sins* (4,701′), a village with many large houses and tokens of wealth brought back by its migratory population. The *Val d'Uina*, opening to SE., is seen on the opposite side of the Inn. A path leads that way to Mals (§ 37, Rte. L). The main valley opens out at

Remüs (4,022′). The bridge, spanning a narrow cleft through which the torrent from Val Sinestra (§ 34, Rte. H) enters the Engadine, stands below the ruins of Tschianuff, a castle erected to defend the valley against the predatory incursions of the Tyrolese. From this village the mountaineer may ascend the

Muttler (10,827′), the highest peak in the Lower Engadine. It has been climbed by M. Weilenmann. A short way below Remüs the *Val Assa* opens on the S. side of the Inn. Rather high up in this short glen is a curious spring, called Fontana Chistaina, said to flow regularly three times a day, being dry at other times. The valley of the Inn between Remüs and Martinsbruck is a defile, which is almost an unbroken continuation of the well-known gorge of Finstermünz. The road passes under the village of *Schleins* (5,056′), standing on a high terrace 1,400 ft. above the river. It was utterly destroyed by fire in November 1855. [The head of *Val Sampuoir*, a branch of the Samnaunthal (§ 34, Rte. H), may be reached from Schleins by the *Sulet Pass* (9,565′), a hunter's pass over the ridge E. of Muttler.]

Martinsbruck is commonly spoken of as the extreme limit of Swiss territory towards the Tyrol, but the steep l. bank of the Inn belongs to Switzerland for a space of four or five miles lower down, as far as the opening of the Samnaunthal (§ 34, Rte. H). The path on that side of the river is a mere goat-track, but more picturesque than the road which crosses the Inn at Martinsbruck (3,343′). and enters Austrian territory. The passport office and custom-house are close to the bridge. The rough road mounts over a projecting ridge, and then descends a little to reach

Nauders (Inns: Post; Mondschein). 4,164 ft. above the sea, on the high road from Botzen to Landeck and Innsbruck (§ 44).

Route B.

SAMADEN TO PONTRESINA—EXCURSIONS FROM PONTRESINA.

Since the Engadine has become more widely known to strangers, the favourite resort of mountaineers has been to *Pontresina*, a village less than 4 m. from Samaden, on the way to the Bernina Pass (Rte. K). It is reached by a good road that ascends gently along the rt. bank of the *Flatzbach*. In the lower village is a clean and comfortable inn (Steinbock), much quieter than those in Ober Pontresina, only a few hundred yards farther on. This stands at 5,915 ft. above the sea, immediately on the N. side of the main group of the Bernina Alps. The inn (Krone) kept here by Gredig has been for some years a favourite resort of English tourists. There have been some complaints, but the general testimony is favourable. A large well-built house (H. Rosegg) has been lately opened. The Weisses Kreuz has also very fair accommodation, and the obliging host knows the country well. Good beer is found here. Lodgings may be engaged at many of the private houses, those of M. Saratz are recommended.

The visits of strangers have created here the profession of guide, and regulations, comprising a tariff, which have been the subject of just animadversion, have been established. The chief guide

was J. Colani, son of a famous chamois-hunter, of whose strange career Tschudi has given an interesting and well known narrative. The present Colani knows the mountains thoroughly, and has been a good mountaineer, but is now past active work. It is to the influence of Colani that a narrow jealousy of strange guides, whether from Switzerland or Chamouni, and the extortionate terms demanded for the ascent of the higher peaks, have been attributed. Jenni and Fleuri, long known as the best guides here, no longer act. Of the younger men, Hans and Chr. Grass, Jacob and Paul Mueller, and A. Ambühl are best spoken of. It is a general opinion among English travellers that the guides here are not so attentive and obliging in small matters as those of Chamouni and the Oberland usually are. This is perhaps owing to the fact that they hold a higher social position, and that in this part of Switzerland a tone of equality between classes is more firmly established than in the more frequented districts of the Alps. The tariff includes most of the minor summits that can by possibility attract the attention of a stranger. The usual charge for the ascent of those between 10,000 and 11,000 ft. is from 7 to 10 fr. per guide, while lesser excursions are charged 5 or 6 fr. For Piz Tschierva, or Piz Corvatsch, the charge is 15 fr., and Piz Morteratsch or the Capütschin 20 fr. So far the tariff was not unreasonable. The extravagant demand of 300 fr. for the ascent of Piz Bernina, subject to increase if there were more than two travellers, and the like sum for the ascent of Piz Roseg, has been abandoned; the first is marked 80 fr., the latter 50 fr. for each guide. Several of the guides have collections of dried plants for sale.

A long list of peaks near Pontresina might be given, the ascent of which may offer agreeable occupation to a mountaineer. Of these, Piz Ot and Piz Padella being more conveniently taken from Samaden and Piz Nair from St. Moritz, have been noticed in the last Rte. The *Piz Chalchang* (10,348′), lying between Val Roseg and the Morteratsch Glacier, and the *Piz Surlei* (10,456′) between the first-named valley and the Inn, are tolerably easy of access.

The following notices of excursions from Pontresina are much abridged. Visitors who remain some days will not fail to purchase the little work by Lechner, mentioned in last Rte., which will enable them to dispense with a guide for many of the easier excursions.

1. *Piz Languard.* The indispensable excursion for visitors to Pontresina is the ascent of Piz Languard (10,715′), commanding one of the finest panoramic views in the Alps. The ascent, which is remarkably easy for a point of such height, takes about 3½ hrs. A horse may be taken (charge 10 fr.) as far as the foot of the last peak. A practised mountaineer does not require a guide. The peak lies about due E. of Pontresina, on the N. side of a little glen whose stream enters the Flatzbach, ½ m. above the village. The ascent is for some way through a wood of larch and arolla, then over easy slopes of alpine pasture, till the track reaches the base of the peak, which is chiefly formed of mica slate. The way thence lies chiefly among large blocks of stone, with patches of snow. The top is marked by a wooden cross and an iron stanchion. The annexed view will give a better idea of the panorama than any description. It includes Monte Rosa to the W., and the central range of the Tyrol Alps to the E. Far more striking than the distant peaks in the horizon are the great summits of the Bernina Alps, rising above the Morteratsch Glacier. *Potentilla frigida*, *Androsace glacialis*, and *Carex Vahlii* are found on the peak. It is possible to make a circuit by a small glacier lying SE. of the summit, and descend into the Val del Fain by a ridge called La Pischa. For this agreeable tour the guides claim 10 fr.

PANORAMA FROM THE PIZ LANGUARD

2. *Morteratsch Glacier.* Next to the Piz Languard, the visit to the Morteratsch Glacier (Rom. Vadret da Morteratsch) is the excursion most recommended to visitors at Pontresina. To make the position of this and the other neighbouring glaciers more clear, a few words on the topography of the Bernina Alps may be serviceable. The principal peaks of the Bernina are disposed in a range running from WSW. to ENE., between *Piz Tremoggia* (11,326) and *Piz Cambrena* (11,835′), or in ridges that project from this central range. Half-way between the two above-named summits rises the highest peak, Piz Bernina (13,294′). This occupies the very centre of the group, and from it, as well as from the Tremoggia and Cambrena peaks, three considerable ridges extend about due N. Between the easternmost and the middle ridge lies the Morteratsch Glacier, while between the latter and the western ridge is the Val Roseg, closed at its S. end by the Roseg Glacier.

The *Morteratsch Glacier* descends towards the N., approaching very near to the Bernina road, at a point about 3½ m. above Pontresina, where it comes to an end in a gorge, near to a fine waterfall of the Flatzbach. The lower part of the glacier is easily traversed, and a rough track has been carried along both banks, used by the sheep that are pastured on the slopes. The excursion from Pontresina is often extended as far as the châlet of Boval, occupied in summer by Bergamasque shepherds. It stands on the l. bank of the glacier, and is reached in about 2¼ hrs. from the high road. A first attempt by the guides Jenni and Fleuri to provide a hut for the convenience of mountaineers at a place much higher than Boval failed owing to the irregular incursions of the glacier stream. A new hut has been completed by the aid of the Swiss Alpine Club, and will doubtless be serviceable for long expeditions. There being now so many rival mountaineers in this district it may sometimes be found overcrowded. Those who wish to traverse a part of the glacier usually go to the Isla Pers (8,169′), a projecting rock, whose position recalls that of the Jardin near Chamouni, which rises from the lower part of the *Vadret Pers.* This is a much-broken lateral glacier, descending towards the NW. from the ridge connecting the Piz Palü, Piz Cambrena, and Mont Pers. Below the Isla Pers it joins the main ice-stream of the Morteratsch, descending from the S. in an almost unbroken ice-fall from the highest crest of the Bernina group connecting the Piz Zupo, Cresta Agiuza, and Piz Bernina. The Piz Zupo is the summit lying due S. along the axis of the Morteratsch Glacier; the rather higher Piz Bernina lies SW., at the origin of the range dividing the Morteratsch and Roseg Glaciers. Speaking generally, the lower part of the Morteratsch Glacier is easily traversed in all directions, while above its junction with the Pers Glacier both ice streams are much crevassed, and the assistance of thoroughly good guides is required for all expeditions above that limit.

3. *Tour of Mont Pers. Diavolezza Pass.* The E. side of the Morteratsch glacier, below the junction of the Vadret Pers, is bounded by a moderately high rugged mass, called *Mont Pers.* The highest point, reaching 10,532 ft., but little surpasses the general height of the ridge extending along the NE. side of the Pers Glacier towards the higher mass of Piz Cambrena. One of the most agreeable excursions from Pontresina is to make the tour of the Mont Pers, mounting by the Morteratsch Glacier, and returning by the Bernina road. A good rope, ice-axe, and a trusty guide (charge 12 fr.) are advisable, as the Pers Glacier is always much broken, and sometimes difficult. The Isla Pers, when approached by the most direct course, is reached in from 4 to 5 hrs. from Pontresina. The way lies a little N. of E. from the summit of the Isla Pers, across a much-cre-

vassed piece of glacier, to the foot of a slope of rough débris, with patches of snow, leading in about 2 hrs. from the island of rock to the *Diavolezza Pass* (9,670′ [R.C.N.]). This commands a very beautiful view of the Bernina peaks on the one side, and the Orteler Alps on the other. The descent is by a snow-slope to the highest of a chain of small tarns, whose name (Diavolezza) has been given to the pass. Overlooking the lakes at the summit of the Bernina Pass, a rough track follows the torrent, and in 2 easy hrs. from the pass reaches the Bernina Inn. In 2 hrs. more the traveller returns to Pontresina.

Mr. and Mrs. Winkworth made, in 1863, a longer circuit by a pass nearer the Piz Cambrena, descending by the Val d'Arli, and reaching the high-road at the same point as by the last-named pass.

4. *Roseg Glacier.* Next to the Morteratsch, the Roseg Glacier is the most considerable of those connected with the Bernina group. It is formed by the confluence of two nearly equal ice-streams. The S. branch, or true *Vadret da Roseg*, originates in the ridge connecting the Piz Roseg, La Sella, and the Capütschin. The SE. branch, or *Vadret da Tschierva*, lies on the other side of Piz Roseg, and is enclosed by that peak, the Piz Bernina, and Piz Morteratsch. In the fork between the two glaciers is a rocky promontory called Agagliogs (9,078′). The Roseg Glacier below the junction is much shorter than its rival, and extends but about 1 m. into the valley that opens close to the village of Pontresina. There is a rough char-road through the glen, and it is an easy walk of 2½ hrs. to reach the foot of the glacier. The slopes on the W. side still support some fine arollas. Of several châlets in the valley, that of Misauna (6,578′) is nearest the glacier, and supplies the best quarters. The favourite excursion is to the summit of the Agagliogs rock, a point which may be reached by ladies, about 5 hrs. distant from Pontresina. Charge for a guide (unreasonable)—10 fr. Mr. Tuckett found a plateau on the E. side of Piz Corvatsch, above the l. bank of the glacier, commanding a still finer view, and returned thence in 2¼ hrs. to Pontresina, passing the châlets of Ota, and enjoying delightful views of the neighbouring peaks. *Trientalis europea*, extremely rare in the Alps, has been found in Val Roseg.

5. *Ascent of Piz Bernina* (13,294′). This remarkable peak was first reached in 1850 by M. Coaz, and next by M. Saratz of Pontresina. The interesting description of the ascent, given by Mr. E. S. Kennedy in the Second Series of 'Peaks, Passes, and Glaciers,' is well known to most readers. The expedition is at all times difficult and laborious, and in some states of the snow has been found impossible. A much shorter course than that followed by Messrs. Kennedy and Hardy has, however, been lately adopted. Instead of making a great circuit by the rocks called 'Festung der Gemsen Freiheit,' in the ridge extending NNW. from Piz Palü, it has been found possible to ascend by the W. side of the great ice-fall of the Morteratsch. This saves fully 3 hrs. on the old route, but is not altogether free from risk from avalanches, and requires the aid of first-rate guides. This leads by a very direct course to the crest of the ridge between the Cresta Agiuza and the Piz Bernina, which itself commands a magnificent view. This, called by M. E. N. Buxton *Cresta Agiuza Sattel* (11,930′), was traversed as a pass between Val Malenco and Pontresina by Mr. Tuckett in 1866, who on the same occasion reached the summit of Piz Bernina along the crest.

Messrs. E. N. Buxton, W. F. Digby, W. E. Hall, A. Johnston, and N. Woodmass, with Jenni, Fleuri, and Walther as guides, reached the summit of the *Piz Palü* (12,835′) by the ridge to the E. of the summit. The weather being very unfavourable, no view was obtained. *Piz Zupô* (13,120′) was

reached in 1863 by MM. Enderlin and Serardy, with a chamois-hunter named Padrutt.

6. *Ascent of Piz Morteratsch* (12,316′). The ascent of Piz Morteratsch, the highest summit of the ridge dividing the Roseg and Morteratsch Glaciers, is a safe and not difficult expedition. The tariff price for a guide is only 20 fr., while 50 fr. (?) are demanded for the Piz Roseg. The descent to the Boval châlet on the Morteratsch Gl., spoken of in the following note by Messrs. Blore and Gosling, is extremely steep, and a party attempting that course in 1864 was very nearly lost in an avalanche.

'We left the Roseg (Misauna ?—Ed.) châlet (good quarters) at 4.30 A.M., reached the top of the rocks in 2 hrs. 40 min., halted 40 min. for breakfast, and gained the summit at 9.30. Descended to the Boval châlet in 3 hrs.' [Mr. Bonney has pointed out in 'Alpine Journal,' No. 23, a pleasant variation on the ordinary route.]

7. *Ascent of Piz Roseg.* This rises very boldly between the Roseg and Tschierva glaciers; its highest portion includes two peakes. The higher, measuring 12,936 ft., is connected by an extremely sharp arête with a second northern peak, lower only by 52 ft. From the latter a rocky ridge, partly covered with névé, extends NNW. to the Agagliogs promontory, which divides the two great glaciers named above. The N. peak has been ascended by Mr. Bircham in 1863, and afterwards by M. Weillenmann, and M. Specht of Vienna, by a hanging glacier that falls from the SW. side of the ridge to the upper névé of the Roseg Gl. The very difficult passage of the arête leading from the second to the highest peak was first accomplished in 1865 by Messrs. A. W. Moore and H. Walker, with Jacob Anderegg as guide.

The *Piz Sella* was ascended in 1863 by Messrs. E. N. Buxton, W. F. Digby, and A. Johnston. It has two peaks close together, of which the highest reaches 11,805 ft. The *Piz Tschierva* (11,713′), *Piz Corvatsch* (11,345′), and *Capütschin* (11,132′) are all easy of access. The Pontresina tariff fixes rates varying from 12 to 25 fr. for a guide to the summit.

8. *Tour of Piz Surlei by the Surlei Fuorcla.* It has been mentioned in Rte. A that there is an easy and charming walk, in great part through forest, from Pontresina to St. Moritz by the Statzer See, Acla, and the SE. side of the Lake of St. Moritz. A moderate walker may enjoy a very pleasing excursion by proceeding from St. Moritz to the hamlet of Surlei, WNW. of the peak of that name, and then following a track to the S. along the l. bank of a torrent. After passing a châlet, the course is up a projecting slope towards a black rock seen from the valley of the Inn, and then bears to the l. till the torrent is again reached at the foot of a little glacier on the N. side of Piz Corvatsch. It is better to pass below the end of the glacier, when a short ascent will lead the traveller to the *Surlei Fuorcla* (9,042′), commanding a noble view of both the Roseg and Tschierva Glaciers and the great peaks enclosing them. From the pass the traveller may descend towards the foot of the Roseg Glacier, or else bear to the l., and so shorten the way to Pontresina. The tour requires 7 or 8 hrs., exclusive of halts.

9. *Tour of Piz Corvatsch.* A much more laborious excursion than the last is the tour of Piz Corvatsch, effected by a pass called *Fex Fuorcla* (10,112′), between that peak and the Capütschin. Some travellers, instead of crossing the pass, mount an adjoining summit called Cima da Fex—apparently that marked 3,302 metres = 10,833 ft. in the Swiss Federal map. The descent into the Val Fex, some way below the glacier at its head, is very steep. As mentioned in Rte. A, the Val Fex opens out near the hamlets of Maria and Sils, and the return to Pontresina is by the high road. A long day is required for the expedition, but the tired traveller may engage a vehicle

at Silvaplana for his return to Pontresina.

10. *The Val del Fain.* This excursion is chiefly recommended to botanists, and especially to those who may reach Pontresina early enough to find the rich vegetation in perfection. The *Val del Fain* is a glen opening into the Bernina road, a little above the Bernina Inn. The name is derived from the richness and abundance of its hay. At its eastern E. is a pass leading into Val Livigno, and another to the N., into Val. Chiamuera (Rte. A).

Route C.

BEVERS TO ST. MORITZ, BY VAL BEVER.

The great majority of travellers will always follow the high road between Bevers and St. Moritz; but to the naturalist or the geologist there are many inducements to turn aside at the first-named village, and to make a circuit by the line of valley which cuts off the group of peaks connected with Piz Ot from the adjoining mass of Piz d'Err and its associated summits.

The *Val Bever* is a comparatively deep trench parallel to that of the Albula Pass (§ 35, Rte. C), but lying at a considerably lower level. The lower part is so nearly flat that a char-road is carried nearly 3 m from Bevers for the convenience of the herdsmen of the valley. In 2½ hrs. from Bevers the track reaches a group of châlets at a point where the valley forks. The SW. branch, traversed by a torrent from the Glaciers of Piz d'Err and Cima da Flix, retains the name Val Bever, while a branch descending from the S. is called *Val Suvretta.* The Val Bever is often visited by botanists, being considered the richest locality for rare plants in this district. *Ranunculus parnassifolius*, *Lychnis flos Jovis*, *Dianthus glacialis*, *Saxifraga controversa*. *Valeriana supina*, several curious hybrid gentians, *Pedicularis incarnata*, *Kobresia caricina*, *Carex Vahlii*, and *C. microglochin*, are among the most interesting species. Following the Val Suvretta, the traveller reaches a flattened saddle between Piz Nair (10,040′) and *Piz Suvretta* (10,085′). A small tarn rests on the ridge which may conveniently be called *Suvretta Pass* (8,589′), and a glen falls towards the SE. to Campfèr. A traveller with a guide may reach St. Moritz by a more interesting rte., passing along the S. side of Piz Nair to the Alp Giop, and thence to St. Moritz.

The geologist will find occupation in tracing the palæozoic and secondary rocks in the ranges enclosing the head of Val Bever. There is a difficult glacier pass connecting the head of the valley with the Val d'Agnelli near the Julier Pass, and another, not less arduous, into the Val d'Err, by the NE. side of the Piz d'Err (§ 35, Rte. A).

Route D.

TOUR OF THE BERNINA—SELLA PASS.

Since English, Swiss, and German mountaineers have made the Bernina Alps their favourite resort, several new passes have been discovered, and there is now a choice between various routes for making a tour of the principal group. This expedition can be recommended only to practised mountaineers, with good guides and fine weather. Nearly all the travellers who have made the tour here indicated have sought shelter at the *Fellaria Alp*, a group of châlets lying in the upper part of a lateral glen of Val Malenco (Rte. G), and there is but one direct course between that place and Pontresina by the W. side of the Piz Bernina, which is that described below as the Sella Pass. On the E. side of the P. Bernina there is open to the mountaineer a choice between various routes which are here briefly indicated. In regard to high glacier passes, such as those here noticed, the writer does not believe that directions given in a guide-book

can supply the need of local knowledge, or at all events of the aid of a first-rate guide.

1. *By the Passo Rovano* (8,596′). This is the least circuitous way for reaching the Fellaria Alp from Pontresina for those who do not wish to undertake a glacier pass. The way is by the high road of the Bernina as far as the Lago Nero, and thence by the Cavaglia track (Rte. K) to the Palü Alp. From those châlets there is little difficulty in skirting the slopes of the *Cornicella* (9,223′), and the spurs of the Pizzo di Verona, keeping to the rt., as high as the nature of the ground will allow, until the pass is attained lying at the S. side of the last named peak. It is indicated without a name on the Swiss Federal Map. It leads into the NE. branch of the Val di Campo Moro (Rte. I), close to the lower end of the Fellaria Glacier. It is necessary to cross a glacier stream, and ascend on the opposite, or W. side, in order to reach the highest châlets of Fellaria, which are thus reached in 7 hrs. walking from the Bernina Inn, or 9 hrs. from Pontresina.

2. *By the Passo di Gambrè.* This name is given on the Austrian Map of Lombardy to the pass connecting the Palü and Fellaria glaciers, though the dotted line on that map does not correspond with the course which must be taken, and the pass seems to be unknown to the natives. It is advisable to sleep at the Palü Alp, or Grüm Alp (Rte. K), or else to start before daylight from the Bernina inn. Skirting the slopes above the N. side of the Palü glacier, the l. moraine is reached in $1\frac{3}{4}$ hr. from the Grüm Alp, just above the lower ice-fall. In $\frac{1}{2}$ hr. the nearly level part of the glacier is traversed to the foot of the higher ice-fall. Early in the season it seems not difficult to continue the ascent by the glacier, but it may sometimes be necessary to bear to the l., and cling to the rocks of the ridge connecting Piz Cambrena with Piz Palü. By keeping well to the l. near to Piz Zupô, the descent of the Fellaria Gl. is effected without serious difficulty, and the route of the Sella Pass is joined about $2\frac{1}{2}$ hrs. above the Fellaria Alp.

3. *By the Cambrena Sattel.* In 1865 several expeditions were made with a view to reach the upper névé of the Palü Gl. by the Cambrena Glacier, a more direct course from the Bernina Inn than that last described. This is best effected by the *Cambrena Sattel*, a well-marked gap in the ridge E. of the Piz Cambrena. It may be reached from the Bernina Inn in $2\frac{1}{2}$ hrs. Bearing to the rt., over shaly slopes, from this gap; the traveller may either ascend by the upper ice-fall, or by steep rocks on the N. side of the Palü Glacier, joining the route of the Passo di Gambrè. By this way the Fellaria Alp was reached in $12\frac{1}{2}$ hrs. from the Bernina Inn.

4 *By the Palü Pass.* It is obvious from a glance at the map that the most direct way from Pontresina to the upper plateau of the Palü and Fellaria Glaciers is by the Morteratsch Gl., supposing it possible to find a practicable pass between Piz Cambrena and Piz Zupô. That which alone may be considered tolerably direct lies very near the summit of Piz Palü, between the highest peak and the rather lower W. peak. The glacier difficulties in ascending from the Isla Pers (Rte. B) try the skill of the guides and the steadiness of the travellers; and the descent, whether by rocks or by an ice-couloir, is extremely steep. This course was taken in 1864 by Messrs. Freshfield, Beachcroft, and Walker. It is possible to pass the ridge between the Morteratsch and Fellaria Gl. farther W. on either side of the projecting rocks called Bella Vista, but this course is more circuitous, though the pass is much lower.

The form and position of the glaciers on the S. side of the Bernina group deserve especial attention. Although the valleys descending towards Val Tellina all tend more or less directly to the S., the reservoirs in which the névé

of these extensive glaciers is accumulated are formed by ridges running E. and W. The Scerscen Glacier is formed of two such reservoirs, resembling frozen lakes rather than glaciers, one being at a much higher level than the other; and it seems probable that the same conditions obtain in the Fellaria Glacier, which has been very imperfectly explored.

From the upper châlets of the Fellaria Alp, which are deserted at the end of August, the way to the Sella Pass is by a rather long ascent over steep but not difficult rocks, avoiding an ice-couloir which is left on the rt., till, in $2\frac{1}{4}$ hrs. from the Alp, the névé of the Fellaria Glacier is reached. The lower plateau of this glacier is nearly level with the upper plateau of Scerscen, and by bearing first NW., and then W. below the rocky ridge descending from Piz Zupò, the low rounded ridge of névé dividing the two glaciers is crossed. The way then lies a little N. of W. over an unbroken field of névé commanding glorious views in every direction, until the *Sella Pass* is attained in about 5 hrs. from the châlets; $2\frac{1}{2}$ hrs. suffice for the descent to the foot of the Roseg Glacier, and 2 hrs. more to Pontresina.

The only important pass not yet achieved in this district is that from the Tschierva to the head of the Scerscen Glacier, between Piz Bernina and Piz Roseg.

Route E.

COLICO TO BORMIO, BY THE VAL TELLINA.

	Kilomètres	Eng. miles
Morbegno . .	17	$10\frac{3}{4}$
Sondrio . .	$25\frac{1}{2}$	16
Tirano . .	$26\frac{1}{2}$	$16\frac{1}{2}$
Boladore . .	$19\frac{1}{3}$	$12\frac{1}{4}$
Bormio . .	19	12
	$107\frac{1}{6}$	$67\frac{1}{2}$

Diligences run daily in summer between Bormio and Tirano, and every day between that place and Colico, although they have ceased to traverse the Stelvio pass since 1859. Light carriages can usually be hired at a reasonable rate. The road here described forms a portion of the great military road of the Stelvio, constructed by the Austrian Government at a vast expense, between the years 1822 and 1825, to connect Milan with the Tyrol.

The *Val Tellina* (Germ. *Veltlin*) is one of the great valleys of the Alps that by its dimensions, its historical recollections, and the beautiful and varied scenery of the main valley and its tributaries, best deserves the attention of strangers; but, in part owing to the fact that it lies out of the ordinary track of English tourists, in part to the bad reputation of the lower portion, supposed to breed intermittent fevers, it has failed to attract much attention. Except at Colico, there is no risk of malaria, but the great heat of the valley below Tirano repels the lovers of mountain air.

The people of the Val Tellina are characteristically Italian, though they have but lately become citizens of the constitutional monarchy. Long subject to the Grisons' leagues, who lorded it over them with a heavy hand, they were annexed to the Austrian states in 1815. They owe to that government the great road that traverses the valley, along with an unbearable load of taxation. Though it has suffered much from destructive inundations—a mischief much aggravated by the unwise cutting down of the forests—the valley is extremely fertile, producing much fine silk, and some excellent wines.

From Colico, nearly to Tirano, the valley mounts very gently, and about due E. It is then turned NE. until it reaches its natural termination at the defile of Morignone. Here the Adda, formed by the confluence of two copious torrents flowing in opposite directions, and meeting near Bormio, descends from the N. through the Serra di Morignone. This was long the political boundary of Val Tellina. Bormio struggled for a separate existence, or underwent the sway of many successive masters.

The military road is carried nearly due E. from Colico to Morbegno, along the S side of the marshy tract that has been formed by the detritus of the Adda; the high wooded spurs of the Monte Spluga to the N., and the Legnone to the S., form fine pictures. The boundary of Val Tellina is reached about 3 m. from Colico. Nearly 6 m. from that place is *Delebio*, near the opening of a mountain glen (*Val Lesina*), through which a steep and rough track leads to Premana (§ 38, Rte. H). On the opposite side of the Adda, at some distance from the stream, is *Traona*, the chief village on that bank.

Morbegno (Inn: Regina d'Inghilterra, good; the cellars used to contain some excellent wine of the valley), stands on rising ground, 853 ft. above the sea, near the site of the ancient town. This was partly destroyed by a great landslip, and consequent inundation of the Bitto, which here enters the valley from the N. (For the passes at the head of Val di Bitto, see § 38.)

This is a substantial country town, with a fine church. There is a commanding view from the hill on which stood the ancient castle, reached by the paved path leading into the Val di Bitto.

A long stretch of straight road, first descending, then remounting, takes the traveller for the first time near to the l. bank of the Adda, and after following its course for a short way, crosses to the rt. bank at the base of a steep rocky hill. On rounding this obstacle, the opening of Val Masino (Rte. F) is seen to the l., and the road crosses the copious torrent that escapes from it, which is held in by massive dykes from inundating the surrounding fields and meadows. Before long the main road returns to the l. bank to avoid a great bend of the river, and in rather more than 2 m. again takes to the rt. bank, to which it adheres until it reaches Tirano. This part of the valley is in some degree defaced by the encroachments of the Adda, whose ungovernable stream often changes its course during inundations. Thus it may be seen, that in the part of the valley now traversed, a little SW. of the village of Berbenno, the river no longer follows the course represented in so recent a map as the Swiss Federal Survey. It is not only the main stream, and the torrents which enter it from the large lateral valleys, that continually threaten the native of Val Tellina with destruction to the fruits of his industry. The trifling channels on the slopes of the mountains, nearly dry in ordinary weather, are liable to swell in a few hours to formidable proportions, and to bear down with them stones and earth, under which the vineyard created by patient labour may be buried in a few moments. The mischief mainly arises from the violence of the rains that fall on the S. side of the Alps, far exceeding anything usual in Switzerland, but it has been aggravated by the rash removal of many of the forests from the flanks of the mountains and the upper valleys. As an illustration, it is said that the commune of *Berbenno*, a village standing N. of the high road, sold a great part of the woods above it for 138,000 francs, and that the damage since done by inundations and landslips due to the same cause amounts to 700,000 fr.

On the S. side of the Adda are seen two valleys—*Val Madre* and *Val Cervo*—each leading to a pass into Val Brembana. About 3 m. farther, on the same side of the Adda, is seen the village of *Cajolo*, at the opening of the more considerable *Val del Livrio*, also leading to the upper end of Val Brembana. The *Pizzo Vespolo* (7,648′) is a prominent point on the W. side of Val del Livrio, and must command a very fine view of the Bernina Alps and the other ranges enclosing Val Tellina. To the l. of the high road are the vineyards of *Sassella*, producing one of the most esteemed wines of the valley.

Sondrio (Inns: Alb. della Maddalena, fair: Corona, or Post, perhaps

the best; Angelo, small and cheap) is the chief town of Val Tellina, once seat of a governor, now of the prefect of the province. Though not large, it has somewhat of the air of a city, containing many good houses and educated inhabitants. The mineralogist may easily obtain permission to see the collection of Signor Giuseppe Sertoli; and a botanist will probably not find it difficult to inspect the local herbarium of Signor Ferrari. The town stands at 1,198 ft. above the sea, at the junction of *Val Malenco* with the main valley. The *Malero* torrent issuing from it is one of the most destructive in Val Tellina. Many new buildings in the town occupy the sites of houses carried away by it in 1834. A massive embankment is designed to protect the town, and to lead the torrent into the Adda; but every heavy fall of rain threatens danger to the inhabitants. It is well worth while to make a slight ascent to the ancient castle, called Masegra, commanding a very fine view of the town and its neighbourhood. On the opposite bank of the Malero, the local antiquaries point out the site of the original city founded by the Tusci.

Few places present more remarkable contrasts than the neighbourhood of Sondrio. Within a few miles of the glaciers of the Bernina and the Monte della Disgrazia, we have here the climate and the vegetation of the shores of the Mediterranean. The fig-tree and opuntia have run wild, the pomegranate ripens its fruit, and delicate Southern shrubs are seen in all the gardens.

Cretinism and goître exist in many of the villages between Sondrio and Tirano. It is said that the valley would not be habitable in summer, but for the currents of air introduced through the lateral valleys to the N. and S., and the western breeze, here called *breva*, blowing from the Lake of Como during the day-time in hot weather.

On leaving the town, the road passes near a fine new hospital, built for 14,000*l.* at the cost of a private inhabitant named Pelosi. On the slopes to the l. of the road are the vineyards of *Montagna*, producing a wine that ranks next after the Sassella and Inferno. The last-named comes from a vineyard near Pendolasco, about 2 m. from Montagna. Since the grape disease, it has been difficult to obtain the finer qualities of Val Tellina wine tolerably pure, except in private houses. On the S. side of the Adda, near Piateda, opens *Val Ambria*, one of the chief valleys on that side of the river. Of its two main branches, one descends from the E., the other from the W. side of the *Pizzo del Diavolo* (9,574′). The first leads to the Val Seriana, the second to Val Brembana. The portion of the main valley, extending hence to Tirano, is the least interesting part of the present Rte. Numerous large villages are scattered along the sunny slopes on the N. side of the river. Several of them were in turn important places during the Middle Ages, when one or the other was chosen as the residence of some local potentate. It would be interesting to ascertain the true nature of the great mound on which stands the village of *Tresivio*, conspicuous from a distance. Some have supposed it the remains of a bergfall; it may be part of an ancient moraine. At Chiuro is the opening of *Val Fontana*. There must be a pass to Le Prese (Rte. K) from the head of that glen, though none is indicated on the Swiss Federal map. On that map is laid down a pass over the glacier on the S. side of the *Pizzo Scalino* (10,925′), by which a mountaineer could return to Sondrio through a branch of Val Malenco called *Val Antognasco*. Nearly 3 m. beyond Chiuro, the main valley is for the first time contracted between the opposing bases of the mountains, at a place called San Giacomo; but it soon opens out again, and the road is carried at some distance from the Adda, and about 12 m. from Sondrio the road reaches

Tresenda. Here a bridge across the river has been constructed for the new road over the Aprica Pass to Edolo, in Val Camonica, § 39, Rte. E. The traveller not pressed for time will do well to mount as far as the place called Belvedere, and enjoy the remarkable view, extending fully 30 m. along the valley of the Adda. In a carriage it takes 2 hrs. to ascend from Tresenda, and 1 hr. to return. A pedestrian, availing himself of short cuts, will mount in 1½ hr. From the lower part of the new road a path to the rt. enters the *Val Caronella*, which leads due S. to a high pass connecting Tirano with the head of Val Seriana (§ 38).

On the slope of the mountain, NW. of Tresenda, all built up in terraces for vines, is *Teglio*, once the capital of the valley to which it has given its name (Val Teglina, corrupted into Val Tellina), and formerly inhabited by powerful families. It is now a mere rural village, whose inhabitants suffer much from a destructive torrent. Leaving to the l. *Bianzone* and *Villa*, the road keeps along the flat, passing (about 3 m. from Tirano) an ancient arch under which the Adda flowed until 1817, when it made for itself a new channel. About 2 m. farther is the bridge over the Poschiavino torrent, which is carried thence between massive dykes to join the Adda. Here the traveller reaches the famous sanctuary of *La Madonna di Tirano*, where a church, rich with precious marbles, has annually drawn thousands of pilgrims since its foundation in 1520. The Inn (San Michele) is better than those at Tirano, and the position more attractive. Here the road of the Bernina Pass (Rte. K) enters from the Engadine, and the snowy peaks seen to the NW. offer a striking contrast to the richness of the foreground. The view from the terrace of the church of Sta. Perpetua is extremely fine, and the ruined fortress of Plattamala on the Swiss frontier, only 1 m. distant, is worth a visit. A fine avenue of poplars, nearly 1 m. in length, leads from La Madonna to

Tirano (Inns: Due Torri, tolerable; Angelo), formerly a walled town of great strength, now open on all sides, lying on the l. bank of the Adda, at 1,509 ft. above the sea. The traveller is surprised to find in this remote country town the stately mansions (*palazzi*) of many existing noble families whose ancestors played a prominent part in the troubled and eventful history of the Val Tellina. The church of San Martino has a fine organ, but there is not much here that need detain a stranger. The high road is now carried along the l. bank of the Adda, and soon reaches a point at the junction of a torrent from *Val Chiosa*, where the river is contracted between the bases of the mountains. This is the natural boundary between the middle portion of the valley of the Adda, and the lower valley extending hence with a very gentle slope to the L. of Como. In 1807 a berg-fall from the *Monte Masuccio* (9,252′), on the NW. side of the valley, fell into the defile, and dammed the course of the river. The waters accumulated to a considerable height, and at the village of Lovero the traveller may see a mark on a house 18 ft. above the ground, recording the utmost limit of the waters. The dam seems to have yielded gradually, as the damage done in the neighbourhood of Tirano was less serious than might have been expected. Many ruined castles may be seen on either side of the river, as this entrance into Italy was always deemed of the utmost importance, and for many centuries the unfortunate inhabitants rarely enjoyed a long respite from the presence of foreign troops. At *Mazzo*, where the church has a fine altar-piece by Malacrida, the road returns to the rt. bank, and soon reaches *Grosotto* (2,188′), where the *Roasco* torrent issues from *Val Grosina*. There is an Inn (Posta), and near to it the house of Giacomo Robustelli, wherein was laid the plan of a massacre that combined the elements of the Sicilian Vespers and the slaughter of St. Bartholomew, equalling

both of them in unsparing ferocity. Patriotic feeling urged the leaders to throw off the yoke of the Grisons rulers, and religious hatred prompted their destruction as heretics. When the blow was struck, and every hand was raised against the fugitives, equally hated as foreign usurpers and as Protestants, the people of Morbegno were alone distinguished by the charitable reception which they accorded to their enemies. [The *Val Grosina* is one of the neglected valleys of the Alps that has not as yet attracted the attention of travellers or men of science. A few miles above Grosotto it divides into two equal branches, one extending about due N., the other due W. The first of these leads to an easy pass E. of the Pizzo di Dosdè, and a traveller might go that way from Grosotto to Bormio, descending through *Val di Verva* into Val Viola, and so reaching the Val di Dentro (Rte. L) The W. branch of Val Grosina might well be taken in the way from Bormio to Pontresina, as it is connected by at least four passes with the valley of Poschiavo. Reckoning from S. to N., the *Forcola di Braga* (8,435′) leads to Le Prese: the *Forcola di Sassiglione* (8,333′), and *Forcola di Rosso* (8,819′), afford a more direct way to Poschiavo, the one to the S., the other to the N. of the *Pizzo Sassalbo* (9377′). More interesting than these is probably the *Passo di Sacco* (9,026′), between the *Pizzo di Teo* (10,007′) and *Cima di Saoseo* (10,729′). The latter pass does not lead directly into the valley of Poschiavo. The track descends into the Val di Campo (Rte. L), about 1 hr. above the point where it opens on the high road of the Bernina. The traveller coming from Bormio need not descend to Grosotto in order to enter Val Grosina, as there is a track from Sondalo by the *Passo del Gatto*; but this is said to be a high and somewhat difficult pass.]

After passing *Grosio*, the road soon reaches a bridge that carries it to the l. bank of the Adda. Here a path is seen to the rt., marked with a finger-post to Mortirolo. This leads by the *Passo Mortirolo* (6,053′) and a lateral valley of the same name to Val Camonica, which is entered about ¾ hr. above Edolo.

The portion of the valley now traversed by the high road is extremely picturesque. To the rt. is a tempting cemetery, where the departed rest under the shade of noble chestnut-trees. The Miggiondo torrent enters the valley from the N. through a gorge, and on the rt. of the road bold rocks give shade from the noonday heat. The last chestnut-trees are passed, and then the mulberry and the walnut reach their limit, about the post-station of *Bolladore* (2,838′). This is divided by the Adda from

Sondalo, the chief place in the Upper Val Tellina. The population here are thought to be the finest in the valley. The road continues along the l. bank, passing opposite a picturesque church of St. Agnese, and a ruined castle, rising above the contracted bed of the valley. This enlarges a little at *Mondadizza*, but soon narrows again, and the road turns due N. as it enters a defile that extends in that direction for several miles. The Rezzalesco torrent here issues from *Val di Rezzo* to join the Adda. [Following that glen to NE., in the direction hitherto pursued by the main valley, the pedestrian may reach a pass that leads him to Sta. Catarina (§ 37, Rte. B); or he may turn to the rt., and reach Vezza in Val Camonica by a track passing over the *Sasso Maurone*.] At Le Prese the road enters the finest part of the defile, crossing to the rt. bank of the Adda, and returning to the l. bank at the Ponte del Diavolo, a fine bridge resting on two huge blocks. Labrador spar, and other fine minerals, have been found in this neighbourhood. The defile, whose central point is the so-called Devil's Bridge, is called *Serra di Morignone*, from a hamlet at its N. end. This has always been considered the natural limit between Val Tellina and the *Valle di Sotto*, or Val Ceppina, extend-

ing to Bormio, and forming part of the territory of that town. The defile was strongly fortified at various periods, and the remains of military works are seen at several points. The ascent is here rather rapid, and there is a very manifest change of climate as the road emerges into the upper valley. After passing opposite to the village of *Ceppina*, the valley opens out, backed by a portion of the range of Monte Cristallo, and the traveller soon reaches

Bormio (Inns: Posta, very fair, much improved; there are two or three others of lower grade, but most travellers go on to the Baths), 4,016 ft. above the sea. The town and Baths are described in § 37, Rte. A.

Route F.

MORBEGNO TO THE VAL BREGAGLIA, BY VAL MASINO—ASCENT OF MONTE DELLA DISGRAZIA.

Having in the preceding Rtes. described the two great valleys that form the N. and S. boundaries of the Bernina Alps, it will now be convenient to notice the tributary valleys and passes by which they are connected together.

The westernmost of these secondary valleys is the *Val Masino*, abounding in objects of interest to the lover of nature in her wilder aspects, yet very rarely visited by strangers. There is very fair accommodation at the Bagni del Masino, now accessible by carriage-road. Three passes, none of which can be called easy, connect the head of this valley with Val Bregaglia.

1. *To Castasegna, by the Forcella di Rochette.* 5 hrs. to the Baths, 7 hrs. (?) thence to Castasegna. — A char from Morbegno to the Baths may be had for 10 frs., but, except for the first 4 m., little time is saved by it. As mentioned in Rte. E, the opening of Val Masino is about 4 m. from Morbegno. A road partly new and practicable for light carriages, but not shown on any map, mounts through the valley, turning off from the high road to Sondrio immediately after this has crossed the bridge over the Masino torrent. At the lower end of Val Masino the torrent is forced aside from its southern course by a steep hill, called Colmine del Dazio, and flows eastward round its base through a narrow defile. The road ascends the steep slope N. of the village of Masino by several zigzags, and then winds along the face of the mountain till it fairly enters the valley at a great height above the stream, near a hamlet called Pioda. In the lower part of Val Masino the rocks are apparently composed of metamorphic schists and sandstones, which pass by insensible gradations into gneiss. Neither does it appear easy to fix a limit between the gneiss and the granitic rocks of the range dividing this valley from Val Bregaglia. The latter are very variable in appearance and composition, sometimes much resembling the well-known *Serizzo Ghiandone* of the erratic blocks about the Lake of Como. As the traveller advances, the scenery increases in interest. On the opposite side of the valley a torrent descends through a lateral glen called *Val di Spluga*, not easily reached from the road, and leads up to the E. side of the peak of *Monte Spluga* (9,351′). This summit, which must command a very fine view, is easily (?) reached from this side. At *Cattaeggio*, where a torrent originating on the SW. flanks of the Monte della Disgrazia, and flowing through a glen called *Val di Sasso Bisolo*, enters the valley, the road crosses to the rt. bank of the Masino, and continues to ascend through a scene of extraordinary wildness. It would appear that at various intervals enormous masses of rock have fallen from the face of the mountain on the W. side of the valley. Some of the more ancient are mossed over, and the people have contrived to grow small patches of potatoes in earth that has been carried up, and laid out on the top of some of these boulders. Among the more recent blocks, proba-

bly fallen within the last two or three centuries, are some of the most prodigious single masses that are to be found in the Alps. One of these, lying close to the road, by far exceeds any with which the writer is acquainted. It is an irregular parallelopiped, measuring 250 ft. in length, 120 ft. in breadth, and 140 ft. in height; so that, even deducting one-fourth for the irregularity of its form, it must contain more than 3 millions of cubic feet of stone. After passing these great blocks the road traverses a tract of flat marshy meadow, and in about 13 m. from Morbegno reaches the fork of the valley. The most considerable branch of the torrent descends from ENE. through the Val di Mello, while the other, nearly exactly opposite, flows from the W. through the short and very beautiful glen called the *Val de' Bagni*. On the N. side of the junction is the poor village of San Martino. The road leaves it on the rt., crosses the western torrent, and ascends along its l. bank. In about 2 m. farther the traveller reaches the

Bagni del Masino, a small establishment, where some patients are found in the height of summer, very beautifully situated, in the midst of pine and larch forests surmounted by granitic aiguilles, and close to several picturesque cascades. The accommodation is very fair, the charges reasonable, and the place deserves to be more generally known. The height is about 3,750 ft. above the sea, or nearly 3,000 ft. above the village of Masino at the opening of the valley, so that the change of climate is very perceptible, and in hot weather highly agreeable.

The man who was first recommended to the writer as a guide, is employed as guard over the woods near the Baths, and knows the paths, but is utterly incompetent for mountain-work. Salvatore Fiorelli of San Martino, whose experience is probably gained as a smuggler, is a far better man, seems to know all the high passes well, and has an air of quiet determination that promises efficiency. In this unsophisticated valley these men are glad to earn 5 francs a day as guides.

Immediately above the Baths one branch of the torrent descends from WSW., while the main branch of the valley mounts due N., and is called *Val Porcellizza*. It is easy to ascend for some distance by a wood-cutter's path on the rt. side of the torrent, and thus gain a view of the lower cascades; but the regular way to the upper part of the Val Porcellizza is by the E. side, at some distance from the stream. The excursion is worth making, even for those who do not intend to cross either of the passes here mentioned.

About $1\frac{3}{4}$ hr. must be allowed for ascending by a good path to the upper level of the valley, above a fine waterfall, where a considerable alp supports a large number of cattle. The principal châlet, here, as in many parts of Lombardy, called *baita*, lies on the E. side of the torrent—the Swiss Federal map being here incorrect as to minute details—at about 6,600 ft. above the sea, on a level with the superior limit of the larch.

The head of Val Porcellizza is enclosed by several bold peaks standing in a semicircle in the following order, reckoning from W. to E.:—*Pizzo Porcellizzo* (10,092′), *Cima di Tschingel* (10,853′), *Punta Trubinesca* (11,106′), and a nameless peak (10,820′). The Punta Trubinesca seems inaccessible from this side, and the Cima di Tschingel appears difficult; both summits have, however, been attained, the latter by Mr. Coolidge in 1867. The only moderately easy summit is the Pizzo Porcellizzo, which has on the summit a stone man erected by the Swiss engineers, who made this a trigonometrical station, although it lies altogether in Italy. The view to the W. and S. is very fine, including a considerable part of the Lake of Como. That to the E., concealed from the writer by a storm-cloud, is doubtless limited by the higher neighbouring

peaks, but probably includes the Monte della Disgrazia. The other summits above mentioned lie on the boundary between Val Masino and Val Bregaglia, here forming the frontier between Switzerland and Italy, while the Porcellizzo overlooks the head of Val Codera, one of the roughest and wildest glens in the Alps. The way from the Baths to Castasegna crosses the head of Val Codera. The ordinary way is over the ridge W. of the châlets of Porcellizza, and some way S. of the peak, about where indicated on the Swiss Federal map, but the track is scarcely (? if at all) visible. A steep descent into the head of Val Codera is followed by a no less steep ascent to the *Forcella di Rocchette* (about 9,000′), whence a very rapid deseent leads down to Castasegna (Rte. A). The distance in a right line is less than 3 m., and the differenee of level exceeds 6,500 ft.

Instead of reaching Val Codera by Val Porcellizza, the traveller may take a track that mounts WSW. from the Baths of Masino to the Alpe di Ligoncio. Thence the way lies rather N. of W. to the summit of the ridge dividing that alp from Val Codera, and then NW., reaching the torrent of the latter valley nearly at the same point as by the course above described. The name Ligoncio, belonging to the mountain-pasture mentioned above, has been erroneously given on the Austrian maps to the highest point in the range N. of Val Porcellizzo.

2. *To Bondo, by the Passo di Bondo.* —There is considerable doubt as to the true position of the pass which is spoken of in Val Masino as Passo di Bondo, connecting Val Masino with the tributary glen of Val Bregaglia, called *Val Bondasca*. The *Bondasca Glacier*, at the head of the latter glen, is an almost continuous iee-fall, enclosed by extremely bold granitic aiguilles. 'If there be any pass, in the ordinary sense of the word, from Val Poreellizza to the Bondasca Gl., it lies not close to the Punta Trubinesca, as shown in the Federal Map, but considerably farther E.' [F. F. T.] In 1864 Messrs. Freshfield, Beachcroft, and Walker traversed a snow col—called by them *Passo di Ferro* (about 10,000′)—at the head of the Bondasca Gl., which led them to a short wild glen called *Val di Ferro*, about due N. of S. Martino. Following the stream, they reached the Val di Mello about ½ hr. E. of that village. None but experieneed ice-men should attempt either of the above passes.

3. *To Vico Soprano, by the Passo di Zocca.* This is a fine pass, quite easy in fine weather, but very laborious if made from Morbegno, as it involves an ascent of more than 8,000 ft. besides a long walk. It is a better plan to divide it into two days, making a slight détour to the Baths, and enjoying the fine scenery of that branch of the valley. Those who go from Morbegno must take food, and cannot always find milk at the châlets lying near the traek. The name by which the pass seems to be universally known in the distriet is here retained in preference to that of Forcella di San Martino, set down in the Swiss Federal map. A guide should be taken, as in case of clouds coming on it would be impossible to find the way.

From the village of San Martino, where the torrent from the Val de' Bagni joins that from Val di Mello, an easy path is carried along the rt. bank of the latter stream. The *Val di Mello* is less picturesque than the other braneh, but on a grander scale. On the N. side a torrent issues in a waterfall from a lateral ravine, and it is possible to aseend that way and so reach the Zocca Pass. But the course is difficult and would take more time, nor is it likely to be adopted except by a smuggler. The shortest way to the Zocca Pass does not lie by the l. bank of the Zoeca torrent ascending from Rasica, as shown in the Swiss Federal map. At a point about ¼ hr below Rasica, and 2¼ hrs. from the Baths of Masino, the ascent is commenced up a steep stony slope where deciduous trees are still mingled with pines. The

bridge by which the track crossed the Zocca torrent was carried away in 1863; and it was then necessary to climb some way up the rt. bank, and then descend to a second bridge. A steep ascent through pine woods, broken here and there by knolls of rock, leads to a châlet (*baita*) which is occupied only for a short time as the herdsmen shift their quarters. Towards the upper part of the lateral glen leading to the pass it is necessary to bear to the l., and the last ascent is but little N. of W. The way is steep, but not at all difficult, and the view is both grand and interesting from its novelty. The *Passo di Zocca*, or *Forcella di San Martino* (8,957′), lies between the *Monte di Zocca* (10,565′) to SW., and the *Cima del Largo* (11,162′) ENE. of the pass. On reaching the crest of the ridge the traveller finds himself unexpectedly overlooking the head of a great glacier that stretches before him for several miles towards the N., between two ranges of granitic peaks, several of which surpass 10,500 ft. The *Albigna Glacier* (Ital. Ghiacciajo dell' Albigna) is remarkably easy to traverse. A very short descent takes the traveller on to the upper névé, and he soon reaches the ice, which inclines gently to the N., and is almost completely free from crevasses. The glacier comes to an end on the level floor of the upland valley, a short way above the point where the rapid descent into Val Bregaglia abruptly begins. The glacier torrent commences its troubled career by springing boldly from the edge of the rocks in a fine cascade. The glacier should be left by its l. bank, and on that side of the stream a tolerable path leads down to the lower valley. The scenery is throughout very beautiful, and the whole way from Morbegno to Vico Soprano will be long remembered as one of the most interesting of alpine expeditions.

Ascent of Monte della Disgrazia (12,074′). In the first number of the 'Alpine Journal,' Mr. E. S. Kennedy has given an account of the ascent of Monte della Disgrazia by himself and Mr. Leslie Stephen, with Melchior Anderegg and an English servant named Cox. A first attempt from the side of Val Malenco having been unsuccessful, they went a few days later to the Baths of Masino, and, starting from thence before midnight, reached the summit in about 12 hrs., returning to San Martino in $5\frac{3}{4}$ hrs. They appear to have passed by the Alpe di Pioda, on the W. side of the mountain, and to have attained the highest crest connecting the two principal peaks in part, at least, by the ridge which divides the head of Val di Mello from that of the Val di Sasso Bisolo. Mr. Tuckett reached the highest peak in 1867 from the head of the latter valley, a preferable route.

A pass over the ridge SW. of Monte della Disgrazia, by which Sondrio is reached from the head of Val di Mello in much less time than by Val Masino, has been pointed out to the Editor. This leads to the head of the Val di Sasso Bisolo, and involves a second pass on the opposite side of that valley, either by the E. or the W. side of the *Corno Bruciato* (9,711′).

Two new passes have recently been effected over the ridges at the head of Val di Mello. The first has been called 'Disgrazia Joch' by Mr. Tuckett, who first traversed it in 1865, with Messrs. H. Buxton and Freshfield. The writer regrets that he cannot adopt a German designation for a pass lying in Italian territory, and provisionally calls it *Passo di Mello* (about 9,500′). It lies over one of the deepest depressions in the range connecting Monte Disgrazia with Monte Sissone. The way is by the rt. bank of a small glacier which comes to an end nearly 1 hr. above the highest malga in Val di Mello. The descent is for $\frac{1}{2}$ hr. over steep rocks, then by the much crevassed Disgrazia Glacier, which is left about 1 hr. from Chiareggio (Rte. G). The other new pass leads to the head of the *Forno Glacier*, the longest ice-stream in this part of the range which sends its tor-

rent—the *Ordlegna*—to swell the Mera close to the top of the Maloya Pass. To reach it from Val di Mello, it seems neeessary to cross the range close to the summit of *Monte Sissone* (10,800′), the corner-stone between the main range and the great ridge of Monte della Disgrazia. It is best reached by a couloir W. of the summit, which commands a magnificent view.

Route G.

CASACCIA TO SONDRIO, BY THE MURETTO PASS.

8 hrs.' walking to Chiesa. 3 hrs. by road thence to Sondrio.

This is the easiest pass from the Val Bregaglia to Val Tellina, but is scarcely so interesting as those described in the last Rte.

'The diligenee-road over the Maloya is followed from Casaccia to within about ¼ hr. of the summit of that pass. A footway then turns off to the rt., leading past the châlets of Lampalü, where there is a mountain still famous, it is said, for its *schnaps*. The path continues on the rt. bank of the Ordlegna, near the stream. Traces are seen at intervals of an ancient paved road, for the most part destroyed, or buried by débris. The pass is still said to be practicable for mules, though not often traversed. A higher track on the talus of the Piz Margna is very rough, and causes a loss of time. In about 2 hrs. from Casaccia, the châlets of Piancaning (6,519′) are passed opposite the foot of the Forno Glacier. From this point the ascent becomes steeper, continuing in a SE. direction. In about another ½ hr. the first snow is reached, the permanent remains of avalanches from the steep mountains on both sides. Near the summit a small glacier descends from the *Monte d'Oro* (10,545′) on the rt., and the traveller should keep well to the l. to avoid its crevasses. The route then lies to the l. of a slight elevation which rises in the centre of the pass and about 200 ft. above it, and the summit is reached in about 3½ hrs. Its height by Dufour's map is 8,616 ft. The view is much shut in, and not very striking; and is better on either side at some distance down than at the summit. In descending to the SE., some considerable patches of snow are first crossed; then keeping the l. bank of the stream, the path soon becomes distinctly marked, and fine views of the Monte della Disgrazia open in front. After about 2 hrs.' steep descent, the valley tends to the E., the descent becomes more gradual, and about ¼ hr. farther passes the ruinous châlets of *Chiareggio*, where stood formerly, and not long ago, a custom-house. The path continues on the l. bank of the Malero, about 1 hr. farther to Prati della Casta, where there is a steep descent, and then crosses to the rt. bank. A slate quarry is passed about ¾ hr. farther, and in rather less than ½ hr. the path falls into a new and well-made road, close to *Chiesa* (3,480′), the principal village of Val Malenco.' [R.C.N.]

There are two Inns at Chiesa, neither of which can be called more than bearable. In both of them extortionate demands have been made upon passing travellers, and in some cases less than half the sum asked has been accepted. The Osteria Antica was improved, and not dear, in 1865. By the new road Sondrio (Rte. E) is reached in 3 hrs.; but as the ascent is continual, and the valley hot, 3½ hrs. should be allowed in going from Sondrio to Chiesa.

Val Malenco is extremely rich in rare minerals, and doubtless awaits further exploration to reveal many objects of interest to the naturalist.

Route H.

PONTRESINA TO CHIESA IN VAL MALENCO, BY THE CAPÜTSCHIN AND SCERSCEN PASSES.

In Rte. D was described a course by which an active mountaineer favoured

by weather may make the tour of the higher peaks of the Bernina in two days. The passes now to be noticed, combined with those described in the two following Rtes., enable a traveller to make a wider circuit in 3 or 3½ days, including far more varied scenery, and one decidedly difficult glacier pass. It appears certain that a pass from the head of the Fex Glacier to Val Malenco by the Scerscen Glacier has been known to the chamois-hunters of Sils by the name Capütscha Pass, taken from a rock called Capütscha on the S. side of the Fex Glacier, supposed to offer some resemblance to the better known Capütschin on the N. side of the same glacier. This pass is indicated on the Swiss Federal map; but the glaciers at the head of Val Malenco, on the S. side of the Bernina range, are not quite correctly given in that map.

Since the map was published, the guide Peter Jenni discovered a pass on the E. side of the Capütschin, leading from the Roseg Gl. to the upper plateau of the Fex Glacier, and reached Chiesa by crossing the ridge to the Scerscen Glacier. The first travellers who accomplished the new pass were Messrs. F. C. Grove and J. M. Wedgewood, in Sept. 1860, followed, a few days later, by Mr. A. Milman and his brother. The last-named gentleman has given an account of the pass in the Second Series of 'Peaks, Passes, and Glaciers.' The excursion has been since made several times, but must be reckoned as decidedly difficult, requiring thoroughly efficient guides (one for each traveller); and in a not unfrequent condition of the rocks, with a crust of ice covering their face, it can scarcely be effected from the Italian side. The charge for guides according to the Pontresina tariff is 25 fr. for going to Chiesa, and 16 fr. for the return, if the guide be dismissed there, or 19 fr. if he be taken back to Pontresina by the Canciano Pass (Rte. I). A porter engaged for the whole tour is entitled to 25 fr. Jenni and Fleuri, who are the most competent men for this pass, refuse to carry any luggage, however trifling, on this expedition. It is doubtless now known to other guides.

The writer feels bound to adopt the name Capütschin Pass for that connecting the Roseg and Fex Glaciers. It appears to be known by no other name at Pontresina, and the name Roseg Pass, used by Messrs. Wedgewood and Milman, is open to the objection that another pass (the Sella Pass) lies between that now in question and the Piz Roseg, while the present pass is close to the Capütschin.

Most, if not all of the travellers who have taken this Rte., have thought it judicious to sleep on the preceding night at the clean and comfortable châlets of Misauna. The course lies along the centre of the Roseg Glacier until the slope becomes steep and the crevasses difficult, when the ascent is continued for some distance by the rocks on the W. bank. On returning to the upper level of the glacier, some steep slopes of névé have to be surmounted, and from 4½ to 5½ hrs. suffice to reach the summit of the *Capütschin Pass*, lying immediately E. of that summit, and about 500 ft. lower, so that the height may be reckoned 10,600 ft.

The view is described, by all who have reached this point, as of the grandest character, the Monte della Disgrazia being especially remarkable from this side. The descent from the upper ridge to the level of the Fex Glacier is the main difficulty of this route. The rocks are extremely steep and slippery, and have been frequently found coated with a thin covering of ice. Travellers are usually lowered with a rope about their waists, relying on the sure hold and steadiness of the guide, who gradually lets it out as they thus descend from one ledge to another. Towards the bottom the slope is less steep, but there are many loose stones that are set moving by the slightest touch. On reaching the Fex Glacier, it is necessary to turn to the l. and ascend to a second col—

the *Scerscen Pass*—which, to judge from descriptions, and the map annexed to Mr. Milman's paper, lies between the summits of La Sella and Piz Tremoggia. It is probably much higher than the pass SW. of the latter peak (Capütscha Pass?), marked on the Swiss Federal map—3,021 mètres = 9,912 ft.

As mentioned in Rte. D, the Scerscen and Fellaria Glaciers are of a very peculiar character, perhaps deserving the name of ice-lakes rather than ice-streams. The Scerscen consists of two parallel ice-fields sloping gently towards the E., each sustained on the S. side by a high terrace of rock. The short ice-stream that carries off the overflow of these upper plateaux descends towards SW. to the neighbourhood of the Scerscen Alp. The torrent thence descends to SSE through a branch of the Val Lanterna, which runs parallel to the middle portion of Val Malenco. Between them is a ridge whose most prominent summit is called Monte Nero. The usual way from the Scerscen Glacier to Chiesa is by this ridge, which lies considerably E. of the Scerscen Pass. The descent is long and rough, but nowhere difficult. Travellers have taken from 12 to 14 hrs., inclusive of halts, to reach Chiesa from the Misanna Alp.

In the first Jahrbuch of the Swiss Alpine Club, M. Weilenmann gives an interesting account of his ascent, without a guide, of *Piz Tremoggia* (11,326′) from the head of Val Fex.

Route I.

CHIESA TO POSCHIAVO, BY THE PASSO DI CANCIANO.

9 hrs.' walking to Poschiavo. 9½ hrs. to Le Prese.

This is a very picturesque walk, passing through fine near scenery, and gaining several remarkable distant views.

'Leaving Chiesa (3,480′), the path ascends in about ¼ hr. by the rt. bank of the Malero to the junction of the Lanterna, where the Malero is crossed and the way lies through the *Val Lanterna*, keeping to the rt. bank, and passing through the village of *Lanzada* and the long straggling hamlet of Vetto. Then begins a steeper ascent on the N. side of the valley, avoiding the precipices which appear completely to close in its extremity. From Chiesa to the summit of these (5,400′) is about 2¼ hrs. Hence there is a slight descent of ¼ hr. to the châlets of Caral, where the path crosses by a natural bridge over the western of three streams which unite at this point, descending from the glacier of Scerscen. From this point the path again ascends steeply to the little level plain of Campo Moro, about 1½ hr farther, passing through fine woods and under lofty precipices. Here a distant, but fine, view is obtained of the Monte della Disgrazia. After crossing the Campo Moro, the ascent recommences on the rt. bank of the stream, but soon passes to the l. bank, and continues to ascend, with the exception of a short descent opposite the Fellaria Glacier, where there are fine views of the Piz Bernina and neighbouring peaks. Here the little Val Poschiavina opens to the ESE., and the stream is recrossed about 5½ hrs. from Chiesa. Notwithstanding its great elevation, the pastures of this upland valley are very productive, and a considerable group of châlets stands at its lower extremity (7,500′). From this point the ascent is comparatively slight. On approaching the upper end of the valley, a fine glacier comes into view, descending from the *Pizzo Scalino* (10,925′) and *Pizzo Canciano* (10,194′). Here the path, which up to this point has been good and distinct, becomes obscure. It is necessary to keep near the rt. bank of the stream for nearly 1 hr. from the châlets; then turning to the l. (E.), the summit of the col is attained in about a ¼ hr. more. Its height is 8,366 ft. The views on both sides are fine, but the best are those of the Bernina chain to the W. The

ridge runs N. and S. It may be passed somewhat higher, a little farther N. than the lowest point, and nearer to the Colmo delle Ruzze, thus avoiding a slight détour. After passing the col, the traveller should keep to the N. till close under the Colmo delle Ruzze, to avoid the precipices immediately beneath him. The valley of Poschiavo appears but a short distance off, though in reality 5,000 ft. lower down. The descent, for about one-third of the distance, is easy and agreeable, for the most part over grass. The path keeps for ½ hr. to the l. of a stream which takes its rise from some little lakes just under the col, then bearing to the l., along the rt. bank of another stream which bursts out suddenly from the mountain side. It then falls into rough mule and sledge tracks, that continue until the high road is joined about ten minutes below Poschiavo. The descent takes from 2 to 2½ hrs. The ascent in the opposite direction about 4 hrs. [R.C.N.] *Alsine recurva*, *Papaver pyrenaicum*, and the very rare *Carex hispidula*, have been found near the summit of the Canciano Pass.

A very rough path leads to Le Prese, but it saves little time. See Rte. K.

The Passo Rovano, mentioned in Rte. D, might enable an active mountaineer to reach Chiesa in one day from Pontresina. The path above described is joined at the point where the Val Poschiavina turns eastward out of the Val del Campo Moro. The *Pizzo di Verona* (11,358′) was climbed in 1865 by Messrs. Tuckett, Freshfield, and Beachcroft, from the upper plateau of the Palü Glacier. They descended by the Gambré Alp, through Val Campo Moro to Val Lanterna. A cairn of unknown origin was found at the top. In the next summer Mr. Tuckett ascended the *Pizzo Scalino* (10,925′), which commands the finest view of the Bernina group from the S. side. It may be taken in the way from Poschiavo to Chiesa, ascending from the Canciano Pass, and descending along the W. arête to the châlets of Prabello, or *vice versâ*.

Route K.

SAMADEN TO TIRANO, BY THE BERNINA PASS.

The only carriage-road connecting the valley of the Inn with that of the Adda is that over the Bernina Pass. The descent on the Italian side by the ancient mule-track was found to offer such difficulties for the construction of a carriage-road, that a new line diverging widely from the ancient course was selected. The original road was ill made and ill kept up, but it has been much improved of late years, and is now daily traversed by diligence in summer; the distance from Samaden to Tirano being accomplished in 7½ hrs.

1. *By the Carriage-road.*

	Swiss leagues	Eng. miles
Pontresina . . .	1¼	3¾
Bernina Inn . .	2	6
Poschiavo . . .	5	15
Le Prese . . .	1	3
Brusio . . .	1¼	3¾
Tirano . . .	1½	4½
	12	36

The road from Samaden to Pontresina is noticed in Rte. B. The high road to Val Tellina mounts from Pontresina by the rt. bank of the Flatzbach. On approaching the foot of the Morteratsch Glacier, where that torrent makes a fine waterfall, the new line of road mounts by zigzags to the l., commanding a much finer view of the glacier and the surrounding peaks than was gained by the old road. In ¾ hr. farther the traveller reaches the *Bernina Inn* (6,723′), offering accommodation and food much better than its appearance promises. The host speaks English perfectly. Half a mile above this the *Val del Fain* opens to the l. The botanist wishing to explore it thoroughly, should fix his quarters at the Bernina Inn. A little farther, another shorter glen—*Val Minor*—opens to the E., and on its S. side the *Piz Lagalp* (9,718′), easily climbed in 2 hrs. from the road, offers a very fine view of the Bernina Alps. Just opposite to the Val Minor the torrent from

the Diavolezza Lakes (Rte. B) crosses the road. A slight ascent now leads to the *Lago Nero* (7,284′). This small dark pool lies on the watershed between the Black Sea and the Adriatic; for while it sends its torrent to the Inn, it is separated only by a mound or dam of incoherent materials (moraine?) from the much larger *Lago Bianco* (7,316′), which feeds the Adda through the Poschiavino torrent. The white colour of the water, whence the latter takes its name, is given by the stream issuing from the Cambrena Glacier. The dam is in one place but 3 ft. above the ordinary level of the Lago Bianco; and when this is flooded by the rapid melting of the snows, the waters overflow the dam, and go to swell those of the Lago Nero.

The ground on the S. side of the Lago Bianco falls away so rapidly towards the valley of Poschiavo, that in constructing the carriage-road it was found expedient to carry it over higher ground to the E., in order to reach another branch of the Poschiavino which descends by a less steep declivity to the lower level of the valley. For this purpose the road bears eastward from the N. end of the Lago Nero, and gradually ascends a low ridge NE. of the Lago Bianco, whereon stands the Hospice, now converted into a very fair Inn, close to the

Bernina Pass (7,658′). Near at hand is a small lake, called *Lago della Crocetta*, one of the highest in the Alps that is inhabited by fish. Near its shores grow many rare plants, e.g., *Lychnis alpina*, *Potentilla frigida*, *Hieracium glaciale*, *Kœleria hirsuta*, and *Arena subspicata*. According to Leonhardi there were visible in this lake, at the close of the last century, the stumps of trees projecting above the water. Whether these may have been the remains of a forest that has disappeared, owing to a slight change of climate, or piles (*Pfahlbauten*) on which ancient lacustrine habitations had been erected, is a matter for curious enquiry. After passing the summit-level, reached in 1½ hr. from the Bernina Inn, the road is carried through a tunnel, and an artificial gallery intended to protect it against avalanches. There are here the remains of a silver mine, formerly worked in hornblende slate. Recent attempts to discover valuable ores have been unsuccessful. The very well-engineered road descends into a swampy upland glen, called *Val Agone*, connected at its upper end with Val Livigno by a low pass (Forcola), 7,638 ft. in height, by which a road might easily be carried to Zernetz. There was formerly an Inn at La Motta (6,509′), the first hamlet on the S. side of the pass, but it has been closed. There is now a rough inn, convenient for some excursions, at *La Rösa*, lower by 400 ft. Following the stream from Val Agone, the road is now separated from the old mule-track by a high ridge, whose chief summit is *Pizzo Campaccio* (8,544′), sometimes ascended for the sake of the view. To the l. is seen the opening of Val di Campo (Rte. L), as the road descends in long zigzags which may be cut off by the pedestrian. A few houses, with the name Le Rovine, mark the site of a village destroyed by a berg fall in 1486. The first village, *Pisciadella*, stands near the torrent from Val di Campo. Corn-fields are seen here at the unusual height of 5,000 ft. After passing the torrent from *Val di Teo*, and some minor streams from other short lateral glens, the road reaches *San Carlo* (3,740′), where the Poschiavino torrent is formed by the junction of the stream that has accompanied the road, with the Cavagliasco descending from the Lago Bianco. Little more than 1 m. farther is

Poschiavo (Inns: Albergo Abrici, good, obliging landlord; Alb. Samadeni; Bernina, smaller), a village of moderate population, but having the air of a town, from the number of handsome houses and neighbouring villas. It is beautifully situated, at 3,317 ft. above the sea, and is the chief place in the Swiss valley of the same name which extends nearly to the

junction of the Poschiavino with the Adda. The most interesting excursion for the mountaineer is the ascent of the *Pizzo Sassalbo* (9,377′), a sharp, prominent peak, rising immediately E. of Poschiavo. Those who wish to reach the summit early may find quarters at the Alp of Sassiglione. The way is by the Passo di Sassiglione (Rte. E), on the S. side of the summit, and presents no difficulty to the mountaineer. A wider panorama, but perhaps not a more beautiful view, would doubtless be gained from the *Pizzo di Sena* (10,099′), the highest summit in the range E. of Poschiavo. The writer is not aware that this has yet been attained. The road from Poschiavo to Tirano has been much out of repair, but recent improvements have been made. About 3 m. of nearly level road lead to *Le Prese*, on the banks of the *Lago di Poschiavo*. A sulphureous spring discovered a few years ago, led to the construction of a handsome and comfortable house, with marble baths and a pretty garden. *Pension*, with wine, is 6 fr. per day. This place has many inducements for those who prefer a mild and rather soft climate to the more stimulating but colder air of the Engadine. The lake is 3,215 ft. above the sea, and the mean temperature in fine summer weather 68°—70° Fahr. The Baths are within reach of many mountain excursions, and the view to the N. includes the Piz Cambrena (11,835′) and many minor peaks. The lake, about 2 m. long, produces excellent trout, and gives visitors the amusement of boating. *Arabis Halleri*, *Peucedanum rablense*, and some other interesting plants, are found here.

The high road is carried along the W. side of the lake, but soon after passing Meschino at its S. end, passes to the l. bank of the Poschiavino. On a high rock to the NW. is the pilgrimage church of St. Romerio (5,906′), worth a visit from Le Prese. Below the bridge the Poschiavino enters a narrow rocky defile, through which it rushes in a succession of rapids and cascades towards its junction with the Adda. At *Brusio* (Inn: Post, fairly good and reasonable) the Protestant pastor is M. Leonhardi, whose little German works, containing descriptive and historical sketches of the Val Tellina, the Lake of Como, and the valley of Poschiavo, may interest the traveller. Tobacco is cultivated here, and smuggled on a large scale into Italy and Tyrol. There are several pretty waterfalls in this part of the valley, of which that of Sajento is seen on the rt. of the road.

The scenery of the lower part of the valley is very rich and beautiful, as the road, descending rather rapidly, passes Campaccio, and reaches the Swiss custom-house station at *Campocologno* (1,759′). The frontier lies a little farther S., at *Plattamala*, where the remains of an ancient fort attest the strategic importance of the position. It is true that no danger need be apprehended from their Swiss neighbours, but it is clear that here, as in too many other places, the Italians have allowed one of the keys of Italy to fall into the hands of the stranger. Travellers usually prefer to halt at La Madonna (Rte. E), but those who would pursue their journey towards Bormio will go into the town of *Tirano*, described in Rte. E.

2. *By Cavaglia.*—There is no doubt that the most interesting way for a pedestrian going from Pontresina to Poschiavo is by the old mule-track, passing by Cavaglia. The path turns aside from the high road at the N. end of the Lago Nero, and keeps to the W. side of that as well as the Lago Bianco, which latter is fully a mile long. The torrent falling from the *Cambrena Glacier* has no bridge, and during the warm hours of the day is somewhat difficult and disagreeable to cross. The pedestrian may make a slight détour, and avoid the difficulty by passing over the glacier. A very large *bloc perché*, a few feet above the lake, will attract the attention of the glacialist. A little below the Lago Bianco the tra-

veller passes another smaller lake, named *Lago della Scala*, so called from the very steep stair-like track that was once carried down the gorge below the lake. This course, in which fatal accidents from avalanches were of frequent occurrence, has been very long abandoned, and there are scarcely any remaining traces of the ancient pathway. The first improvement upon it was to carry a path farther W. by the Grüm Alp, where larches and pines begin to show themselves at about 6,700 ft., and near the Palü Alp (6,382′), the latter close to the foot of the beautiful Palü Glacier. It is worth while to make a slight détour by the foot of the glacier, but the ordinary path leaves the châlets a little to the rt., and descends through charming scenery, amid rocks and pines, to the Alp of *Cavaglia* (5,581′), a green plateau surrounded by wood, and overhung by the Cornicella, a lower peak of the Pizzo di Verona. The scenery is, if possible, even more beautiful throughout the descent from Cavaglia. The Cavagliasco torrent which now unites the streams from the Lago Bianco and the Vedretta di Palü is followed through a romantic gorge as far as a bridge—Puntalta—where it has worn for itself a deep channel in the granite rocks, till it suddenly makes a terrific plunge and is lost to sight. The lower part of the gorge is impassable, and the path leaves it to the l. and descends along the slope of the mountain by Codera and Privilasco to Poschiavo. The walk from Pontresina to Poschiavo will be accomplished in about 6½ hrs, exclusive of halts, or even less by an active walker, but the way is throughout so beautiful that it is a pity to hurry over the ground.

It is possible to join the Cavaglia track from the Hospice on the summit of the Bernina by crossing a range of large stepping-stones over the shallows between the Lago Bianco and the L. della Scala.

Route L.

PONTRESINA TO BORMIO.

The course from Pontresina to Bormio by the road of the Bernina, descending to Tirano, and then remounting along the stream of the Adda, is very circuitous. Those who wish to save time, or to vary the route, may select one or other of the passes here indicated. The first is the shortest, and by it an active pedestrian may reach Bormio in one long day's walk; or he may save labour by taking a char as far as La Rösa.

1. *By Val Viola.* In descending from the Bernina Pass to Poschiavo by the high road, the traveller leaves on his l. hand a lateral valley whose torrent is crossed by the road a short way above Pisciadello. This is the *Val di Campo*, which extends ENE. to a pass called *Passo di Val Viola*. On the opposite side the Val Viola descends in the same direction for 8 or 9 m., so that the pass, with the valleys on either side, marks a line of depression parallel to the main chain, enclosed between ridges whose height often exceeds 10,000 ft. The traveller descending by the road from the Bernina Pass should not follow this to the level of the torrent from Val di Campo, but may enter that valley much higher up by leaving the road at La Rösa, where the innkeeper will point out a path leading from the back of his house. In about 1½ hr. from La Rösa the traveller crosses a stream descending into Val di Campo from the NNW. This issues from a glen called *Val Mera*, at the head of which a high pass (8,776′) leads into Val Livigno, passing on the W. side of the *Corno di Campo*, with three summits measuring in order from SW. to NE., 10,610, 10,843, and 10,814 ft., of which the highest was attained in 1866 by Messrs. H. Thomas, Lewin, and Finney, with Jenni and Fleuri as guides.

Above the junction of Val Mera the main branch of Val di Campo is often called Val Viola Poschiavina, to distinguish it from the Val Viola Bormina, through which lies the descent to Bormio. The scenery is throughout extremely fine, but the path is, or was, very rough, and in some places hard to trace amidst fallen rocks and trunks of pine-trees. The *Corno di Dosdè* (10,597′) rises grandly, in an almost unbroken precipice, fully 2,600 ft. above the ridge which closes the head of the valley. To the rt., in a deep basin, surrounded by rocks and pines, is the beautiful little lake of *Saoseo* (7,097′), which must be drained by a subterranean outlet, as it is enclosed by a barrier of rock. On approaching the head of the valley, it appeared to the writer that there is no difficulty, except the roughness of the ground, to prevent a traveller from keeping straight on close under the grand peak of Dosdè; but the regular course is that indicated on the Swiss Federal map, following a streamlet due N. for a short way, and then turning E. to the *Passo di Val Viola* (about 7,900′). Near the summit the writer found the carcase of a cow recently killed, and partly devoured by a bear. The *Val Viola*, through which lies the descent to Bormio, is a long and rather an interesting valley, bare of trees, and defaced on the NW. side by slopes of débris. After descending for nearly 1 hr., the traveller stands opposite the opening of the *Val di Dosdè*. [This fine glen is enclosed between some of the highest summits of the secondary range dividing Val Viola from Val Tellina. On the E. side is the Pizzo di Dosdè ascended in 1866 by Messrs. Freshfield and Walker. On the opposite side is the *Corno di Dosdè*, ascended a few days later by Messrs. Thomas, Lewin and Finney, from the head of Val di Campo. But it may be as easily reached from the Dosdè side, as they descended SW. from the summit to a point in the ridge (marked by a stone man) that forms a fine pass between Val di Campo and Val di Dosdè. The last-named travellers also attained the second peak of the *Corno di Lago Spalmo*, seemingly the highest of this group. On its N. slopes an extensive glacier—*Vedretta di Dosdè*—closes the S. end of the glen.] Nearly 1 hr. below the opening of Val di Dosdè another lateral valley, called *Val di Verva*, opens on the S. side of Val Viola. At its head is a pass (see Rte. F) leading through Val Grosina to Grosotto in Val Tellina.

In descending the Val Viola to Bormio, on reaching the second châlets the traveller should choose the path to the rt., somewhat downhill, and in nearly 3 hrs. from the pass will join the track descending due E. from the Foscagno Pass (Rte. M) at the hamlet of Semogo. Below the junction of the streams the valley, which now bends to the E., is called *Val di Dentro*, or Val Pedenosso. Its chief village is *Isolaccia*, on the l. bank of the torrent, scarcely ¼ hr. below Semogo. A char-road is carried thence, first by the rt., then by the l. bank of the torrent, to *Premadio*, standing at the junction of Val di Dentro with the valley of Bormio. To reach that town, the traveller bears to the rt. down the valley; but if he seeks the better accommodation of the Baths (§ 37, Rte. A), he will see the building before him on the slope above the opposite bank of the Adda. This route involves a long day's walk. The distance from Pontresina to La Rosa is counted 5 hrs.; but a pedestrian may do it in 4½ hrs. From that place to the Val Viola Pass is fully 2½ hrs., and 4½ hrs. must be allowed for the descent to Bormio. Travelling in the opposite direction, a horse might be taken from Bormio as far as the head of Val Viola.

2. *By Val Livigno.* A traveller who has reached St. Antonio in Val Livigno from Bormio, by either of the passes mentioned in the next Rte., by keeping to the main branch of that valley may join the Bernina road, and so proceed to Pontresina by either of two easy passes. Beyond the last châlets of

Val Livigno, a track ascends somewhat S. of E. along the torrent which is the principal source of the Spöl. At the point where the valley bends to the S., a rather rough ascent towards the E. leads to the *Passo della Stretta* (8,143′), at the E end of Val del Fain, through which there is a well-marked track to the Bernina road, entering it about 2 hrs. from Pontresina, and a little above the Bernina Inn (Rte. K).

By keeping along the track to the extreme head of Val Livigno, the traveller would reach the *Forcola* (7,638′), a pass mentioned in Rte. K. The track on the S. side from the Forcola would lead the traveller to Poschiavo through Val Agone; but a slight ascent to the SW. will take him on to a broken, irregular plateau, whereon lie several small tarns, whence he may descend to the Bernina road either by the N. or S. side of the Piz Lag. lp. By the latter way he will soonest join the road on the N. side of the Lago Bianco.

ROUTE M.

BORMIO TO THE ENGADINE, BY VAL LIVIGNO.

In Rte A, reference was made to the considerable stream of the Spöl, which joins the Inn near Zernetz. This stream is made up by the union of torrents issuing from a number of tributary valleys, the most considerable of which is Val Livigno. This originates at the Forcola Pass, a short distance N. from the summit of the Bernina Pass, and follows a tolerably direct course to NNE. as far as the junction of the Val del Gallo, receiving on the way a torrent issuing from Val Federia on the l., and Val di Trepalle on the rt. Between the junction of Val del Gallo and Zernetz, the Spöl pursues for many miles a sinuous course through an extremely wild defile, one of the most savage and impracticable in the Alps. While the access from Val Livigno to Zernetz thus becomes difficult and circuitous, the passes that connect it with the Engadine are higher and more difficult than those that lead to the valley of the Adda. It is doubtless owing to these peculiar geographical conditions that, by a solitary exception, the frontier of Italy here trespasses across the watershed, and annexes to the peninsula valleys whose waters flow towards the Black Sea. Everywhere else, in following the boundary between Italy and her neighbours, we find that it is they who encroach upon the limits that nature has set between them.

The easiest and most direct way from Bormio to Val Livigno is by the Val di Dentro. A track passable for country carts leads by Isolaccia and Semogo (Rte. L) into the E. branch of the Val di Dentro, terminating in the *Foscagno Pass* (6,329′), probably the lowest, as it is certainly the most direct, between the Adda and the Inn. If general convenience and commercial advantages, and not political and strategic considerations, had directed the Austrian Government in the construction of a line of road between Innsbruck and Lombardy, this or the adjoining Val Fraële (§ 37, Rte. H) would have been selected. Some small pools lie at the summit of the Foscagno Pass; passing these, the char-road descends gently to the village of *Trepalle*, in the lateral valley of the same name, 3½ hrs. from Bormio. The traveller proceeding to Livigno does not descend the *Val de Trepalle* to its junction with the Spöl, but follows the track over a low hill lying in the fork between the valleys, taking 1 hr. to ascend, ½ hr. to descend into Val Livigno, and gaining an agreeable view.

Val Livigno is a sequestered and purely pastoral district, there being no tillage except a few patches of rye at the opening of Val Federia. The inhabitants, who have little intercourse with the outer world, have preserved their native habits and costume. There is, properly speaking, no village, but many houses are scattered at intervals through the valley, especially near to the churches. Following the above-mentioned track from Trepalle, the valley is entered near Sant' Antonio (6,145′), about 5 hrs. from Bormio. The only Inn in the valley lies somewhat to the l. It offers tolerable beds, but poor and scanty fare. The traveller bound for the Upper Engadine must bear a little to the rt., in order to enter Val Federia, whose torrent joins the Spöl about 1 m. below St. Antonio. The main branch of Val Livigno stretches SSW., with a gentle upward inclination towards the two passes mentioned in the last Rte.

Three courses are open to the traveller who would enter the Engadine from Livigno; the first and second lead to the Upper Engadine, the third to Zernetz.

1. *To Scanfs by the Casana Pass.* After entering *Val Federia*, the path along the torrent is followed for about 1 hr., and then a track mounting the ridge to the NW. by which, in 1¾ hr. more, or three hrs. from St. Antonio, the traveller attains the summit of the *Casana Pass* (8,832′). It lies nearly due S. of *Piz Casana* (10,079′). A rather steep descent leads into *Val Casana*, and in 1 hr. from the top he reaches the châlets of the same name (7,310′), where milk, and sometimes bread, may be found. The track then lies by the rt. bank of the torrent, till this is crossed ½ hr. lower down. The path again crosses and recrosses the stream; but on approaching the junction of *Val Trupchum*, a wild glen whose head is enclosed by rugged peaks exceeding in height 10,000 ft., it keeps to the l. along the slope of the mountain, and finally bears about due W. as it descends to *Scanfs* (Rte. A), reached in 2½ hrs. from the pass, or 5½ from St. Antonio. Travelling in the opposite direction, 6 hrs. are required to reach Livigno. Less than ½ hr. beyond Scanfs is the better inn at Zutz.

2. *To Ponte by the Lavirum Pass.* It is a long day's walk to reach Scanfs from Bormio by the Casana Pass. The *Lavirum Pass* (9,249′), though higher, is easy, and Ponte is reached as soon as Scanfs. The pass is seen straight ahead from the lower part of Val Federia. Though the track is often lost, the way is easily found in clear weather. A deep gully is crossed before reaching the summit, a broad dreary plain nearly 1 m. across. The descent lies due W. through *Val Lavirum*, which joins the picturesque *Val Chiamuera* about 1¼ hr. above Ponte.

3. *To Zernetz.* The principal church of Val Livigno stands near the junction of the torrent from Val di Trepalle with the Spöl, about 2 m. from St. Antonio. Below the junction, the Spöl enters a wild and uninhabited gorge, which extends with little interruption to Zernetz, being probably the longest unbroken defile in the Alps. For nearly 2 hrs. the path is carried near the stream, crossing and recrossing it twice, till it reaches the junction of the torrent issuing from *Val del Gallo*. This forms the limit between the upper, or Italian portion of the valley of the Spöl, and the lower part, belonging to Switzerland. For about ½ hr. farther the path keeps to the rt. bank of the stream, but farther progress then becomes impossible, and in order to reach Zernetz a long détour is necessary. The path mounts to the rt. across the ridge dividing the Ofen torrent from the Spöl, and bears NE. to the Ofen Wirthshaus, on the road from Munster to Zernetz (§ 37, Rte. I). 6½ hrs., exclusive of halts, are required to reach Zernetz from the Inn at St. Antonio.

Map of the
ORTELER DISTRICT.
London. Longman & Co.
English Miles
1 2 3 4 5 10
Edwd Weller

SECTION 37.

ORTELER DISTRICT.

While the range of the Bernina Alps appears to dwindle to comparatively small dimensions as we trace it to the NE., and it is difficult to fix its limits in that direction, another group of high Alps rises between the head waters of the Adda and the valley of the Adige. This includes several projecting ridges or promontories, one of which, lying on the N. side, is crowned by the Orteler Spitze, the highest of the entire group.

Until very recently the orography of this group was very ill understood, and in the first edition of this work the writer was forced to rely upon rather vague conjecture in default of accurate knowledge. A paper by Mr. F. F. Tuckett in the 11th No. of the Alpine Guide, giving the results of an expedition made by him in 1864 with Messrs. E. and H. Buxton, with Christian Michel and Franz Biener as guides, first threw abundant light upon most of the questions previously involved in doubt. This was followed by several papers in the third annual volume of the Austrian Alpine Club, the most important of which were contributed by Dr. E. Von Mojsisovics. More recently Lieut. Julius Payer, previously known as the chief explorer of the Adamello range, has nearly completed the exploration of this district by expeditions among the Trafoi Alps, described in 'Petermann's Mittheilungen,' and by subsequent excursions in the range of the Pallon della Mare.

The disposition of the mountain masses will be best understood by fixing attention in the first place on the *Monte Cevedale* (12,505′), improperly called on many maps Zufall Spitze, or Zefall Spitze. From this central point diverge in opposite directions, to the NE. and SW., two branches which orographically constitute a single range, tolerably uniform in geological structure, being formed of crystalline slates. The NE. portion of the range divides the Martellthal from the parallel valley of Ulten, and from the head of Val di Rabbi, the drainage on both sides being carried into the Adige. The SW. portion of the same range, on the contrary, separates the streams that fall into the Adda through Val Furva from those that feed the Adige through Val di Non. The chief summits in the NE. range, which from its highest peak may be called the Zufrid group, are the *Venezia*, or *Konzen-Spitze* (11,0 5′), the *Hintere Rothspitz* (10,344′)—whence diverges the ridge dividing Val della Mare from Val di Rabbi—and the *Zufridspitz* (11,262′), whence another high range runs between Val di Rabbi and the Ultenthal. To the latter peak succeed a number of points that project but little from the general level till we reach the *Hasenohr*, or *Flatschberg* (10,673′). Beyond this extends the much lower range dividing Ulten from the Vintschgau, and terminating opposite Meran.

On the SW. of Monte Cevedale, the main range describes a long curve convex to SE., enclosing the great névé-basin drained by the Vedretta di Forno. Adopting Lt. Payer's nomenclature, and indicating in brackets Mr. Tuckett's names, the chief summits in this range, beginning at the NE. end, are—*Pallon della Mare* (12,038′), (*Fornaccia*, T.), *Monte Vios* (11,902′), *Saline* (11,772′), *Pizzo Taviela* (11,472′), *Punta Cadini* (11,425′), *Giumella* (11,650′), and *Punta di San Matteo* (11,920′) (*Palle della Mare*, T.). A ridge extending WNW. of the last terminates in the beautiful double peak of the *Tresero* (11,636′, and 11,601′). The snowy range terminates towards the SW. in the *Corno dei Tre Signori* (10,912′). In a geological sense, this range, parallel to the course of the Inn, and to the valleys of Martell and Ulten, about 25 m. in length from the Corno dei Tre Signori to the Hasenohr, and continued for 12 or 13 m. towards Meran, must be considered the main

range; but it is much surpassed in height by the irregular mass lying W. of Monte Cevedale, that includes all the best known mountains of this region. Unlike the range first described, this consists in great part of secondary rocks, including soft friable slates, and highly crystalline dolomite, with some rocks referred to the verrucano. Although it throws out huge buttresses and promontories, the axis of this range keeps a tolerably uniform direction nearly due W. from Monte Cevedale. The first summit, insignificant in other directions, but very prominent when seen from Sulden, is the *Sulden Spitze* (11,109′), W. of which rises the noble *Königs Spitze* (12,646). This is known on the Italian side as Zebru, but the same name has been given to the next summit, which, to avoid confusion, is now called *Kleiner Zebru* (12,251′). W. of this extends the range which has been collectively called the Cristallo Group. But the confusion arising from the vague use of the name Monte Cristallo, makes it expedient to reserve that designation for the single peak ascended in 1864 by Mr. Tuckett and his companions. A broad snow col separates the Kleiner Zebru from the *Thurwieser Sp.* (11,962′), to which succeed the *Trafoier Spitze* and *Ziegerpalfen Sp.*, or *Schnee Glocke*, of Lt. Payer. The next prominent summit is the true *Monte Cristallo* (11,370′) Its western rival is the *Monte Video* (11,361′). From hence one ridge extends due W. between Val Furva and Val di Vitelli, while another, whose highest point is the *Nagler Spitze* (10,687′), runs WNW. towards the upper end of the Val di Braulio.

Scarcely less important than the principal range are the ridges that branch out from it in various directions. Separated from the Königs Spitze by a broad plateau of névé, is the considerable range (formed of crystalline slates?) extending parallel to the Martellthal. Its chief summits are the *Schöntauf Sp.* (10,893′), the four summits of the *Peder Spitzen*, of which the highest attains 11,349 ft., and the *Laaser Sp.* (10,827′). A great offset, including the *Vertrain Sp.* (11,371′), the *Ofen Wand* (11,558′), and the *Angelus Sp.* (10,982′), encloses the head of the Laaserthal. On the S. side of the Königs Sp. a much less considerable ridge curves round to the W. between the two main branches of Val Furva. Its highest summit, *Monte Confinale* (11,076′), is destined to future celebrity as the Gorner Grat of this district. Most interesting to the mountaineer is the short ridge extending N. from the Kleiner Zebru, and culminating in the *Orteler Spitze* (12,814′). This is a very bold promontory, connected with the vast snowfields of the upper level of this group by a narrow crest covered with névé. Much less important is the short Madatsch ridge, projecting to the N on the W. side of the Madatsch Glacier. Its southern and highest point, the *Madatsch Spitze*, measures 11,244 ft.

Besides the lofty ranges hitherto referred to, it has appeared necessary to include in this section many outlying ridges. Thus to the N. it comprehends the mountains lying in the angle formed between the Engadine and the road leading from Meran to the Finstermünz, and to the E. several valleys that descend towards the Adige. The geographical limits of the district are the Engadine to the N., the Adige to the E., the valley of Non and Sole to the S., with the pass leading from the latter to Val Furva, and the valleys connecting Bormio with Zernetz by the Foscagno Pass to the W.

The territory here included is divided between three States. The valleys drained into the Inn, with a trifling exception, and one of those near the head of the Adige, belong to Switzerland: to Italy are now united all the affluents of the Adda: but the larger part of this district lies within the Austrian dominions. On this account, the mountaineer wishing to explore the country should have his passport duly provided with an Austrian *visa*. The

Baths of Bormio afford good accommodation, but the lover of grand scenery will prefer the less luxurious quarters found at Sta. Catarina. There are many other places that may afford interesting occupation to the mountaineer Of these Trafoi, on the Stelvio road, and Rabbi in a lateral valley of Val di Sole, deserve especial commendation. While within view of the numerous forts and blockhouses erected of late years by the Austrian Government in the valleys leading to the Adige, the traveller must carefully avoid sketching, or even making notes of any kind, on pain of disagreeable consequences.

The Valley of the Adige, forming the boundary of this district, is not described here. The German portion above Botzen is described in § 48.

Route A.

BORMIO TO MALS—PASS OF THE STELVIO — ASCENT OF THE ORTELER-SPITZE.

	Italian miles	Eng. miles
Santa Maria . . .	10¼	11¾
Trafoi	7¾	9
Prad	7	8
Mals	7¼	8¼
	32¼	37

The magnificent road of the Stelvio, in many respects the most remarkable ever constructed, seemed to be doomed to ruin, after the separation of Lombardy from the Austrian monarchy, there being no adequate motive for incurring the heavy expenditure necessary to keep it up; but the communes on either side have contrived to maintain the road in tolerable order since 1859, and may be able to do so for some time longer. A small post omnibus runs daily in summer between Bormio and Eyers (§ 48, Rte. A). Voituriers commonly employ six days between Samaden or St. Moritz and Innsbruck, sleeping at the following places on the road : — 1. Poschiavo or Le Prese ; 2. Bormio ; 3. Trafoi ; 4. Nauders ; 5. Imst; 6. Innsbruck. It would be hard to name any other line of road, passable in a carriage, lying through such beautiful, grand, and varied scenery as this. The distances given above on the road between Bormio and Prad are believed to be correct, as measured along the carriage-road ; but a pedestrian may shorten the way considerably, and the distance between Trafoi and the Baths of Bormio may be walked in 5½ hrs., exclusive of halts.

Bormio—Germ. *Worms.*—(Inn: Post, improved, recent reports favourable ; several inferior houses), is a small but very ancient town, 4,016 ft. above the sea, frequently mentioned in mediæval history, both owing to its position as one of the keys of Northern Italy, and for the mineral springs near it, which appear to have been known in the time of Pliny. It stands close to the junction of the Frodolfo, issuing from Val Furva (Rte. B) with the Adda, which is formed a few miles N. of the town by the union of the torrent from Val Fraële (generally considered the main source of the river) with the Braulio, issuing from the ravine that leads to the Stelvio Pass. A fourth stream issues from the Val di Dentro, about 1½ m. above Bormio, and including the branch that drains Val Viola (§ 36, Rte. L), has the longest course of all those that unite in the basin of Bormio. Though situated in the near neighbourhood of grand scenery, the little town will not detain the traveller, who will prefer to fix his head-quarters at Sta. Catarina (Rte. B), or else at the *Baths of Bormio.* These are about 1½ m. N. of the town, on the slope of the mountain overlooking the Adda. The high road is carried up hill all the way to the New Baths. This is a large, handsome, and well-managed establishment, now much frequented by Italians during the summer, and sometimes over-crowded. The position is convenient for some excursions, but far inferior to Sta.

Catarina. Charge for a char to Tirano, 14 or 15 fr.

The waters of Bormio are said to be intermediate in character between those of Leuk and Pfäfers, and to be efficacious in some female diseases. A few hundred yards above the new establishment are the Bagni Vecchi (4,708′), now occupied by patients of the poorer class. In the gorge below the Baths, the united torrents from Val Fraële and Val di Braulio issue through a narrow cleft, forming a picturesque waterfall, enclosed between vertical rocks. Although the entrance is difficult, Val Fraële (Rte. K) is connected by easy and low passes both with the valley of the Inn and that of the Adige; and it is now questioned whether it would not be cheaper to construct a new road in that direction than to incur the cost of keeping up the existing line. At the Ponte del Piano, close to the junction of the two torrents, the road enters the Val di Braulio through one of the wildest and most savage defiles in the Alps. Excepting the Via Mala, there is none other so forbidding in aspect that has been pierced by a carriage-road. At the entrance of the first tunnel (Galleria dei Bagni), an inscription perpetuates the names of the two Italian engineers, Donegani and Masetti, who planned and directed its execution. Several other short tunnels follow in rapid succession, as the road ascends to the first refuge (Prima Cantoniera), 5,971 ft. above the sea. Here the narrowest and wildest part of the defile has been passed; but though the valley opens a little, nothing can be more stern than its aspect. Bare rocks and steep slopes of débris rise on either side, seeming to defy the boldness of those who first thought of making such ground passable for wheeled vehicles.

The Seconda Cantoniera, now in ruins, is 839 ft. higher, and about 2 m. beyond the first. As a protection against avalanches, the road is throughout a great part of the ascent covered by artificial stone galleries, preserving the natural slope of the mountain, and allowing free passage to snow, ice, and rocks, that sweep the declivity. Beyond the second refuge a bridge called Ponte Alto crosses the torrent from Val di Vitelli.

After crossing the bridge, the road is carried in zigzags up a rocky slope known as Spondalunga, above which it crosses to the rt. bank of the Braulio torrent, and in 1 hr from the second refuge reaches the Terza Cantoniera (7,874′). Stunted plants of *Pinus mughus* are seen up to 7,600 ft. The steepest part of the ascent having been surmounted, the road enters the wild basin in which the Braulio torrent is formed by the melting of the snows on the adjoining heights. To the W. is *Monte Braulio* (9,790′), whose slopes produce many of the rarest alpine plants, amongst which may be noted *Ranunculus parnassifolius*, *Papaver pyrenaicum*, *Crepis pygmæa*, *Primula oenensis*, and *Aira subspicata*. A comparatively gentle ascent leads to the former post-house and Cantoniera di Sta. Maria (8,153′), with a large building containing the custom-house, and giving shelter to the men employed on the road. There is here a rough, but tolerable Inn, which may be serviceable to a mountaineer wishing to explore the Orteler group. The landlord, a very civil Italian, keeps a meteorological register, formerly furnished to him from Vienna. The inn here stands about 200 feet higher than the hospice of the Great St. Bernard, and this is by many degrees the highest permanently occupied hostelry in Europe. Close at hand is the ancient pass, known as the *Passo di Braulio*, or *Wormser Joch* (8,323′). A short way to the NW. is the summit of *Piz Umbrail* (9,954′), commanding a better view than Monte Braulio. The traveller should not fail to diverge a few yards from the road in order to gain the ridge whence a good track leads in 2½ hrs. down to Sta. Maria in the Münsterthal. That name is given (see Rte. H) to the upper part of the valley of the Rammbach, which

belongs to Switzerland, while the lower portion, commencing 3 m. below Sta. Maria, is within the Tyrolese frontier. It appears that when the Austrian Government decided on the construction of the great road through Val Tellina, it was expected that the Swiss might be induced to cede the small corner of their territory required to carry the road down to Glurns in the Vintschgau, or to make a convention which would have given to the Austrians full control over the road. It was upon the failure of this design that the bold project of carrying the road over the still higher and much more difficult Stelvio Pass was formed and achieved.

On the Italian side the ascent is not very steep, but some zigzags may be cut off by the pedestrian, shortening the way (nearly 2 m. by the road) from the Cantoniera Sta. Maria to the *Stelvio Pass*—Germ. *Stilfserjoch*—9,213 ft. above the sea, and more than 1,500 ft. higher than any other pass traversed by a carriage-road. Here a scene of unexpected grandeur is suddenly opened. During the ascent, rock scenery of the sternest kind has exclusively prevailed, and though masses of ice are seen to impend over the stony barriers on the S. side of the road, they are no way conspicuous in the view. The traveller now finds himself on the verge of a steep declivity whose slope, covered with incoherent débris, and obviously the favourite track of avalanches from the adjoining heights, falls at a uniform angle towards a glacier that sweeps down from the rt. towards the valley below. The glacier is the *Madatsch-ferner*, or Madatsch Glacier; the mountain on the opposite side is the *Madatsch*, and beyond it are the snow-fields above the Trafoi Glacier, culminating in the Orteler Spitze. The distant view is better seen from an eminence N. of the road (easily reached in 10 minutes), sometimes called Dreysprachen Spitze, because it is the corner-stone between the German valley of Trafoi, the Italian Val di Braulio, and the Swiss-Romantsch Münsterthal, or Val Mustair. From the summit, where a deserted hut gives shelter to a watchman on the boundary between Italy and Austria, it is well worth while to reach the higher summit of the *Monte Plessura* (9,941′), lying rather farther to NNE., and easily reached in 1 hr. from the pass. The Œtzthal Alps (§ 48) and some of the peaks of the Bernina are the most remarkable distant objects.

The descent of the slope on the W. side of the pass was one of the most arduous parts of the great work. The steepness of the mountain, and its exposure to avalanches, suggested no small amount of difficulty and danger. The road is carried along a sort of notch cut in the face of the mountain in a long succession of zigzags, while the requisite protection from avalanches is afforded by galleries of massive timber, with the roofs set so as to coincide with the natural slope, and to offer no projecting surface to resist the shock. These galleries are falling into a ruinous condition, and it has been found necessary to remove several of them. Out of forty-eight zigzags on this side of the pass, the majority are between the summit and *Franzenshöhe*, formerly a post station and barrack, now open as an inn from 1st June to 15th Oct., about 7,200 ft. above the sea. The view from thence is very beautiful, and may content those who approach the pass from the side of the Vintschgau without intending to cross into Italy. Besides the Madatsch Glacier and the peaks beyond it, the traveller now looks down into the Trafoithal, which is scarcely seen from above, as it bends to the NE., while the course hitherto followed has been nearly due E. The sight of the pine forests that clothe the slopes of that beautiful valley is refreshing to the eye, that has scarcely rested on a tree since leaving the Baths of Bormio. In 2 hrs. from the summit the pedestrian, availing himself of short cuts, very easily reaches

Trafoi (5,079′) (Inn : Post, good, simple, kept by Frau Barbara Orteler, a new house is probably now finished),

very beautifully situated opposite the opening of a short glen, through which descends the torrent from the Trafoi Glacier. Those who attempt nothing more ambitious should make a short excursion to the foot of that glacier, offering, in exquisite combination, all the elements of grandeur and beauty. The way to it follows the l. bank, and crosses the torrent from the Madatsch and Trafoi Glaciers, and then reaches the Heiligen drey Brunnen, a sort of mountain sanctuary, where three little fountains of exquisitely pure and cold water are made to issue from three rudely-carved wooden figures. From the dark face of the Madatsch three copious torrents issue from cavities in the limestone, and either from these, or the minor sources consecrated by religious feeling, it is supposed that Trafoi (tres fontes?) takes its name. The geologist will remark the contrast between the black limestone of which the Orteler Spitze, the Madatsch, and the neighbouring ridges are composed, and the talcose and other crystalline slates of the mountains N. of the Stelvio Pass. About 2½ m. below Trafoi is *Gomagoi* (3,901′), with a small and poor inn, at the junction of the Suldenthal (Rte. D) with the Trafoithal. An interesting excursion may be made to the Sulden Glacier, reached in 4 or 4½ hrs. from Gomagoi. Below the latter village the mountains on both sides are composed of mica-schist. After passing a smelting house and leaving *Stilfs* on the slope of the mountain to the l., the road reaches *Prad*, the chief village of the valley, with two country inns. This is very near to the lower end of the Trafoi —or, as it is also called, *Stilfser-thal*. In about 1¼ m. from Prad the road reaches a bridge over the Adige, and joins the great road of the Vintschgau at *Spondinig*. Here the traveller bound for the Northern Tyrol turns to the l., and soon reaches *Mals* (Inns: Post; Hirsch). Those going to Meran and Botzen will turn to the rt., pass Eyers, and descend the Adige to Laas (§ 48).

Ascent of the Orteler Spitze. This noble peak, whose relations to the neighbouring ranges have been noticed in the introduction to this section, has of late been ascended by many German and English mountaineers. The old route for the ascent lay mainly along the rocky ridge descending NW. from the summit to the Heiligen drey Brunnen. That ridge bounds on the NE. side the double ice-stream, which is commonly spoken of as the Trafoi Glacier. This, in truth, includes two separate glaciers, divided by a very steep rocky ridge called *Ziegerpalfen*. The *Unter Trafoiferner*, which has been also called Orteler Gletscher, is that nearer to the Orteler Sp., drains the larger snow-basin, and descends lower (to about 5,400′). The *Ober Trafoiferner* falls between the Ziegerpalfen and the Madatsch ridge, which divides it from the Madatsch-ferner. In ascending by the old route it was usual to bivouac at an abandoned hut in a hollow above the Drey Brunnen, and to effect the steepest part of the climb by an ice-couloir, called the Pleis, which involved much step-cutting, and some risk from falling ice and rocks. On the N. side of the ridge that bounds the Pleis is a glen or depression, called *Tabarettathal*, closed at its upper end by the small Tabaretta Glacier that falls westward from the N. ridge of the Orteler Spitze. By this glen, partly by the moraine on the rt. bank, and partly by the Tabaretta Gl., Messrs. Tuckett, and E. and H. Buxton, with Christian Michel and Franz Biener, struck out a new route in 1864. On approaching the summit of the ridge dividing them from Sulden they turned to the rt., and ascended the rather steep but not difficult slopes of névé that cover the NW. face of the mountain. As in the old route, the highest ridge must be struck some way SW. of the highest point, which is a very sharp ridge (likened by Mr. Tuckett to the keel of a boat), in some places almost overhanging the head of the Sulden Glacier. The objection to this new route lies in the risk of ice-

avalanches from the upper part of the mountain, which fall pretty frequently on the Tabaretta Glacier. This may be avoided altogether by ascending to the N. ridge of the mountain through a hollow immediately above Trafoi, parallel to, but N. of the Tabarettathal. 'It is proposed to build a stone hut on the W. slope of the Tabaretta Spitze to facilitate the ascent.'—[E. M.]

The earliest ascent of the Orteler Sp. was made from the Suldenthal, but the ancient course has become impracticable. This lay along the E. ridge descending from the peak between the head of the Sulden Gl. and the true *Orteler Glacier*, not to be confounded with the Unter Trafoi Glacier on the opposite side of the mountain. Dr. E. von Mojsisovics, who also ascended by Mr. Tuckett's route, has effected the ascent from Sulden by the Marleck, a ridge projecting eastward from the Tabaretta Spitze, and by a couloir locally called Durchfahrt. This route joins that of Mr. Tuckett on the ice-slopes above the Tabaretta Glacier. It appears to be shorter by 1 hr., and free from the risk of avalanches. The best local guides for the Orteler Sp. are Johann Thöni, J. Pinggera of Sulden, and J. Mortzug. Anton Ortler is not recommended. No one of these is very good upon ice, and they require to be kept in order as to the use of the rope.

'Moderate walkers who do not attempt the ascent of the Orteler may gain an admirable view of the mountain from the summit of the Korspitze (9,604′), rising W. of Trafoi, and easily reached from thence in 4 hrs. There is a good path nearly to the top.'

Mr. J. Warner recommends in preference the view from *Piz Münschuns* (9,751′), lying in the same range. The highest point is apparently *Piz Costainas* (9,865′), which seems to be also accessible without difficulty.

Route B.

BORMIO TO TRENTO, BY VAL FURVA AND VAL DI SOLE.

	Hrs.' walking	Eng. miles
Santa Catarina	2½	7½
Pejo	7	15
Fusine	2	6
Malè	3	9
Cles	3	9
San Michele	4½	13½
Trento	3½	10½
	25½	70½

Char-road from Bormio to Sta. Catarina—On foot from thence to Pelizzano—Carriage-road from Pelizzano to San Michele—Railway from thence to Trento. The distances set down above are only approximate.

There are not many routes through the Alps that offer a greater variety of grand and beautiful scenery than that here indicated, especially if the traveller will give himself time to explore the neighbourhood of Sta. Catarina and Pejo, and to make a slight détour to the Baths of Rabbi (Rte F). The walk from Sta. Catarina to Pejo involves the passage of a high and rough ridge, free from difficulty to the mountaineer, but somewhat too laborious for ladies. They may reach the Val di Sole from Sta. Catarina by a less difficult though longer way, descending from the Gavia Pass to Ponte di Legno, and then following the Tonale road to Pelizzano; or the whole tour may be made in a carriage, by returning from Sta. Catarina to Bormio, descending the Val Tellina to Tresenda (§ 36, Rte. E), traversing the Apriea Pass to Edolo (§ 39, Rte. E), and following the main road of the Tonale (§ 39. Rte. A) to Pelizzano.

As mentioned in Rte. A, the *Frodolfo* torrent issues from *Val Furva* close to Bormio. A tolerable char-road is carried along the rt. bank, reaching in ½ hr. *S. Nicolo*, the principal village of the valley. At *S. Gottardo*, about ¼ hr. farther, the *Val di Zebru*, descending from the E. joins the main branch of Val Furva, which here turns SE. The beautiful pyramidal peak of the Tresero, which was

in view in the lower part of the valley, is now concealed. Except for the botanist, who may gather by the wayside *Hieracium glaucum*, *Echinospermum deflexum*, and *Woodsia hyperborea*, there is little to attract attention, as the road ascends gradually along the rt. bank of the torrent, until in about 2½ hrs. from Bormio the traveller approaches

Santa Catarina. This place consists of a chapel and four or five houses on the rt. bank of the Frodolfo, and a large building on the opposite bank, occupied in summer by visitors who come to drink the water of a strong chalybeate spring that issues near at hand. Being highly charged with carbonic acid, these waters are agreeable to the taste when mixed with wine, and are bottled and largely consumed in the N. of Italy. From the mean of 14 observations taken by the writer, the Stabilimento stands 5,720 ft. above the sea. The position of this place, in the centre of a semicircle of snowy peaks that extend fully 25 m. from the Stelvio road to the Tonale Pass, is most attractive to the mountaineer, and the scenery, in the writer's opinion, decidedly superior to that of any place in the Engadine. The accommodation is rather rough, the food good, and the charges reasonable; but the house is not as clean as it ought to be. The best guides in the valley are Pietro Compagnoni and Ignazio Antonioletti. The first is a steady and safe man.

The pine forests here are much finer than those of the Upper Engadine; and these, as well as the higher ridges, offer many rare plants, such as *Hutchinsia brevicaulis*, *Dianthus glacialis*, *Cherleria imbricata*, *Linnæa borealis*, *Willemetia apargioides*, *Primula glutinosa*, *Kœleria hirsuta*, and *Sesleria tenella*.

A level plain extends for ¾ m. above Sta. Catarina, and here the Val Furva comes to an end, at the base of the beautiful *Monte Tresero* (11,636′), also called Piz Alto, not to be confounded with the Corno dei Tre Signori mentioned below, though the derivation is the same. The Tresero is, in truth, merely the gable end of a sharp snow-ridge projecting WNW. from the *Punta di San Matteo* (11,920′), which crowns the watershed between the Frodolfo and the Nos. Of the two torrents meeting above Sta. Catarina, the most considerable flows from the NE. branch, or Val Forno (Rte. C); the lesser stream issues from Val Gavia, which opens due S. at a high level above the mineral spring.

Sta. Catarina is the Zermatt of the Rhætian Alps. In the centre of a great girdle of snowy peaks it beholds but one of the higher summits; and though the Tresero recalls the form of the Weisshorn rather than that of the Matterhorn, and the Forno Glacier is not comparable in dimensions to that of Gorner, the relative positions are much the same. As the Gorner Grat affords the grandest panorama near Zermatt, so here the *Monte Confinale* (11.076′), the highest part of the ridge dividing Val Furva from Val di Zebru, commands a view that must be more and more famous as it becomes generally known. All the highest peaks of this district, mentioned in the introduction to this section, are seen ranged round the spectator—the Orteler Sp. rising far above the col between the Kleiner Zebru and the Thurwieser Spitze and the deep rugged trench of Val di Zebru lying between the eye and the high range beyond it, vastly enhances the effect. Of more distant peaks, the Presanella, seen to the rt. of the Tresero, the Monte della Disgrazia, the Bernina group, and the Piz Linard, are the most remarkable. The way to the Confinale is nearly straight through an upland hollow, whose streamlet falls just opposite to the Stabilimento. At its upper end a ridge of shattered rocks is seen supporting a small snow-covered glacier that mantles the broad shoulder of the mountain. The more direct way involves some scrambling amid huge loose

blocks, but the glacier is thus reached where it seemed safe and unbroken. It is rather easier to bear to the l., and keep along the ridge so as to avoid the glacier. Practised mountaineers will not require a guide, but do wisely to take a rope. The height above the valley being about 5.350 ft., moderate walkers will take 4 to 4½ hrs., including halts. The descent is easily made in 2½ hrs. The way is too rough for most ladies.

Several other excursions from Sta. Catarina are incidentally noticed in this and the following Rtes. No visitor should omit a visit to the Forno Glacier (Rte. C), a very beautiful and easy excursion, quite fit for ladies.

Several passes are now known across the high range enclosing the Forno Glacier. The most direct way to Pejo is probably the *Passo di Vios* (about 10,868′), traversed by Mr. Tuckett, in 1866. It is a slight depression between the *Monte Vios* and the *Saline* (11,772′), which latter point, reached in 1 hr. from the pass, commands a magnificent view. In mid-June the Vios Glacier presented no difficulty. Later in the season Mr. Tuckett recommends travellers to keep to the SW. side. Time from 8 to 9 hrs., excluding halts. Mr. Tuckett has described another pass, named by him *Passo del Forno* (11.041′)—*Passo della Vedretta Rossa* of Payer—of which the following is an abridged account:—'The ascent offers no difficulty whatever, and except for the first ¼ hr., the eastern side is also perfectly easy. Sta. Catarina to foot of Vedretta di Forno, 1½ hr.; thence to right (N.) lateral moraine at the foot of the ice-fall, 1 hr.; along moraine, ¼ hr.; up slopes of rock and turf to rt. lateral moraine of a glacier descending from S. side of the Fornaccia, 1 hr.; and thence to summit of the pass, 1½ hr. Total ascent, 5 hrs. Bearing to the l. during the descent of the *Vedretta Rossa*, and keeping somewhat N. of the centre, the ice was finally quitted for the l. lateral moraine in 1 hr.; the highest malga in the Val della Mare reached in 1¼ hr.; Pejo in 2¼ hrs.; and the Bagni in ¼ hr. more. Total descent, 4¾ hrs.

Quite equally interesting is Lt. Payer's pass — *Col degli Orsi* (10,847′)—lying between the Giumella and Punta Cadini, about the southernmost point in the range enclosing the Forno Glacier. The descent lies by the l. bank of a small glacier at the head of *Val degli Orsi*, which joins Val Bormina less than 1 hr. above the mineral spring at Pejo.

There is no doubt that a pass may be effected, more direct, but probably longer than the Sforzellina Pass, leading to Pejo across the ridge enclosing the Gavia Glacier, but no particulars respecting it have reached the Editor. This proposed pass might be taken in connection with the most attractive excursion from Sta. Catarina—the ascent of *Monte Tresero*, or that of the still higher *Punta di San Matteo*. Neither can be reckoned as a difficult peak for travellers accompanied by a guide well used to ice-work. Both were first ascended in 1865, on the same day, by Messrs. Tuckett, Freshfield, and Fox, with François Devouassoud and Peter Michel. Turning to the l. from the Senter di Tresero, leading to the Gavia Pass (§ 39, Rte. F), they struck up the slopes to the l. before reaching the Ponte di Preda (see below), and gained the rt. moraine of the *Gavia Glacier* in 2¾ hrs. from Sta. Catarina. Following at first the centre of the ice-stream, then keeping to the rt. to avoid the most broken part of the ice-fall, they traversed the séracs, and attained the NE. corner of the upper plateau of névé. To avoid a furious wind, they diverged a little from the direct course, crossed the ridge connecting the P. di S. Matteo with the Corno dei Tre Signori, and reached the former peak from the S. side in 5¾ hrs.' actual walking. Favoured by weather, the view was of marvellous extent, comprising the Alpine chain from Monte Viso to the Gross Glockner. Returning by the same course to the head of the Gavia Glacier, and crossing a snowy ridge that projects from the inner, or SE. peak of the Tresero, the NW. peak was gained in 1¾ hr. more.

This, which is the only summit visible from Sta. Catarina, surpasses its rival by 35 ft. It commands a horizon rather less extensive than the P. della Mare, but has the advantage of looking down directly into the Val Furva and the valley of Bormio. In subsequent ascents of the Tresero a more direct course has been taken, chiefly along the ridge forming the N. boundary of the Gavia Glacier.

The ordinary way to Pejo, which is, however, very little used, is by the *Passo di Sforzellina* (9,950′), reached by the more frequented of the two paths leading to the Gavia Pass, which is further noticed in § 39., Rte. F. In its northward course from the head of Val Gavia to join Val Furva, the torrent has cut an extremely deep and quite impassable ravine, so that those who would gain the upper level of Val Gavia must take a course at some distance from the stream. This is easily passed only at one point, about 500 ft. above the level of Val Furva, where a bridge called Ponte della Vacca serves the herdsmen who dwell in summer on the opposite slopes. To reach this from Sta. Catarina, the track ascends the hill-side S. of the Stabilimento, then bears to the l. nearly at a level, till it is necessary to descend somewhat to cross the Gavia torrent by the above-mentioned bridge. To this succeeds a long and steep slope where the track mounts by zigzags, till, in about 1½ hr. from Sta. Catarina, the traveller attains the level of the Val di Gavia. This broad trough, with a nearly level floor subsiding gradually from its upper end, where its height is about 8,600 ft., to the edge of the slopes overlooking Val Furva (about 7,600′), divides the Tresero range from the range of *Monte Sobretta* (about 11,000′) forming the S. boundary of Val Furva. When once the upper level has been attained, the path mounts very gradually, at first along the base of a rocky ridge extending from the Tresero. Through an opening in this ridge the Gavia Glacier protrudes its icy tongue close to the track, which here crosses the glacier torrent by the Ponte di Preda. After passing the bridge the traveller may begin gradually to ascend diagonally above the level of Val di Gavia till he reaches the névé of a small glacier that covers the ridge on the N. side of the *Corno dei Tre Signori* (10,910′).

The beautiful *Primula glutinosa*, one of the greatest ornaments of this region, is very abundant throughout the ascent to the pass, which is reached in 3½ hrs. from Sta. Catarina. The view is limited, but may be extended by climbing a sharp tooth of rock N. of the pass. A rather steep descent, for a short way along the moraine of a small glacier of the Corno dei Tre Signori, leads down to the level of *Val Bormina*. The way lies along stony slopes left of the torrent, gradually rising a little above its level, till the traveller descends to cross a foot-bridge just above the junction of Val Piana, a wild glen originating under the crags of the Giumella. The track, now well traced, keeps to the rt. bank as far as the Malga di Palu, standing at the junction of Val Bormina with a short glen running up to the Passo di Montozzo (§ 39, Rte. F), which leads to Ponte di Legna. The path returns to the l. bank in descending the valley—now called *Val del Monte*—passes by the way a newly discovered mineral spring, and, in 7 hrs.' steady walking from Santa Catarina, reaches *Pejo*. The so-called Fonte di Pejo is a pleasant chalybeate spring on the rt. bank of the torrent, which attracts many visitors to a rough inn, open only during the short season of less than 3 months. When it is full, those who seek night-quarters must ascend at least 20 min. to the village of Pejo, standing on the steep slope above the l. bank, where there is a very poor inn.

A rapid descent leads in less than ½ hr. to *Cogolo*, a village on the l. bank of the torrent, henceforward called *Nos*, at the junction of the *Val della Mare* (Rte. F). Here lives Domenico Veneri, the best guide hereabouts. An easy and agreeable path leads from Cogolo

along the valley, called *Val di Pejo*, as far as Fusine.

In about 2 hrs. from Pejo the traveller reaches Fusine, a small place at the opening of Val Vermiglio, through which descends the new road of the Tonale (§ 39, Rte. A), one of the many by which the Austrian Government sought to bind the Lombard provinces to the Empire. On reaching that road the traveller is but twenty minutes from *Pelizzano*, where there is a tolerable inn. The valley of the Nos now assumes the name *Val di Sole*, or *Sulzberg*, which is often given collectively to the main valley and its tributaries down to the point where it turns abruptly to the S. and obtains the name Val di Non. It is usually possible to hire a char at Pelizzano; but otherwise it is necessary to walk as far as Malè, a distance of fully 9 m. Below Pelizzano the *Nos*, or Noce, torrent, now swollen by many tributary streams, follows a course at first a little N. of E., and after passing Dimaro its course is due ENE. The peaks of the Tresero range are here completely shut out, and the scenery, though pleasing, is not very striking. Occasional glimpses of the range of the Presanella and Piscanno (§ 40) are gained, but the highest mountains rarely come into view from the main valley. This is somewhat contracted, leaving little space for cultivation; yet several villages follow in rapid succession. The chief of those on the rt. bank of the Nos is *Dimaro* (with a decent country inn), at the confluence of the *Meledro*, issuing from the picturesque *Val Selva*, through which lies the only easy way from the N. into Val Rendena. A very fair looking inn is passed 2 m. farther, about 10 min. before reaching the principal place of Val di Sole—

Malè (Inn: Corona, very fair accommodation, but notorious for extortionate charges), a thriving village (about 2,530′), on the N. side of the Nos, close to the junction of the Rabbies torrent issuing from Val di Rabbi (Rte. F). A slow country diligence plies daily to the rly. station at San Michele, with a long halt at Cles in ascending the valley. Below Malè the road to Cles, which has been improved, keeps to the l. bank till the Nos falls through a deep ravine, and at the same time is bent to the rt so rapidly that its course from ENE. is soon turned about due S. The road descends to a bridge, and then winds along the steep slopes above the rt. bank, passing the chapel at St. Chiatar, which commands a beautiful view. Here the traveller enters the fertile district called *Val di Non*, or *Nonsberg*, which includes not only the lower valley of the Nos, but also the tributary branches noticed in Rte. I. On high ground some way from the stream stands

Cles (Inns: Aquila; Corona), a small town of great antiquity, as is proved by Roman coins of the Republic, and many of later date. The church which has given the place its name (Ecclesia) stands on the site of a temple of Saturn. The neighbourhood is rich rather than picturesque, producing much wine and silk. For some distance the road traverses an undulating hilly tract W. of the Nos; but farther on the scenery becomes much more interesting, as the road descends through the narrow valley which is ultimately contracted to the defile of Rochetta. Several castles are seen during the descent to San Michele, of which the largest belongs to Count Thun. The *Rochetta*, through which lies the only carriage-road between the head of Val Camonica and the Adige, has been fortified by the Austrians within the last few years. The scenery of the defile is very striking, and the road finally emerges from it in one of the finest parts of the valley of the Adige. There is a road on both banks of the Nos leading down to the Adige. The better way, that taken by the diligence, keeps to the rt. bank through *Mezzo Lombardo* — Germ. Welsch Metz—(Inn: Corona, very fair). Pedestrians bound for San Michele should prefer the old road on the oppo-

site bank, traversing *Mezzo Tedesco*, or Deutsch Metz. These names, and other similar designations in the valley, refer to the ancient distribution of the population along the frontier dividing the German and Italian races. In modern times the Italians have in some measure driven back the tide of northern immigration, and the *Welsch*, or Italian tongue, prevails almost exclusively as far as Botzen.

At the station of San Michele, rather more than 10 m. from Trento, the traveller joins the rly. from Botzen to Verona, described in § 57.

Route C.

SANTA CATARINA TO LATSCH, BY THE PASSO CEVEDALE.

The way from Sta. Catarina to the German Tyrol through the Martellthal is extremely interesting, and not at all difficult with a good guide. It is, however, quite possible to miss the true way for the descent from the pass on the E. side, and on this account it is more advisable, when practicable, to take it from the E. side than from Sta. Catarina.

The way from that place to the Cevedale Pass is through the beautiful *Val Forno*, a short glen through which the stream from the Forno Glacier descends to join the Gavia torrent, and form the Frodolfo. A frequented cattle-track on the rt. bank of the stream leads from the bridge at Santa Catarina, commanding exquisite views of the Tresero, on whose steep NW. flank the *Chiarena Glacier* is seen suspended. In about 1½ hr. the track reaches a rocky knoll rounded by the former passage of the glacier, but now forming the barrier which arrests the progress of the *Vedretta di Forno*, the most extensive glacier of this district. Its basin is enclosed by the high peaks enumerated in the introduction to this §, the highest of which is the round-topped Pallon della Mare, conspicuous from Sta. Catarina. These summits describe a concave arc whose chord is about 5 m. in length.

The way to the Martellthal turns away from the Forno Glacier, and mounts the green slopes above its rt. bank, whereon stand numerous châlets, and some rather solid and comfortable houses, inhabited in summer by herdsmen and their families. At the top of these slopes an upland glen, called *Val Cedeh*, opens out somewhat E. of N. Through this lies the way to the pass. It offers little interest until the noble Königs Spitze, and the ridge connecting it with the Monte Cevedale, comes into view. The notch in the ridge descending from the former peak, called by Mr. Tuckett Königs Joch, will also be observed. Following a sheep-track at some height above the l. bank of the stream, the l. moraine of the Cedeh Glacier is struck in 1 hr. from the upper châlet, or 3 hrs. from Sta. Catarina. For ½ hr. the glacier is traversed, and then an ascent of 1 hr. more over steep slopes of rock and débris leads to the summit of the *Passo Cevedale*, called in the Martellthal *Langenferner Joch* (10,765′ E. M.). This lies between the Königs Spitze and Monte Cevedale, but nearer to the latter. By bearing to the l. over the plateau of névé forming the summit of the pass, but keeping a little to the rt. of the Sulden Spitze, here showing as a low cone projecting from the snow-field, the traveller will strike the ridge called by

M. von Mojsisovics *Janiger Scharte*, which separates the névé of the Langenferner from that of the Sulden Glacier, over which lies the descent to Sulden. This passage is about 220 ft. lower than the Passo Cevedale.]

The *Langenferner*, over which the traveller must find his way to the Martellthal, is far more extensive than the Cedeh Glacier, and is in many places broken up into huge séracs. In attempting the descent in 1864, from the Italian side, M. von Mojsisovics encountered serious difficulties; but on returning a few days later, under the skilful guidance of Janiger, he effected the ascent without finding any serious obstacle in the way.

The scenery at the head of the Martellthal is of the grandest character. The main ice-stream of the Langenferner receives a considerable affluent from the SW., called Fürkeleferner, descending from the Monte Cevedale, here called Fürkele. A short way farther down, the *Hohenferner* descends in a great ice-fall from the S. The pass leading over it into Val della Mare is noticed in Rte. F. Farther down on the S. side of the valley several other glaciers—the Ultnermarktferner, Gramsenferner and Zufridferner—come in succession into view, but do not reach the level of the valley. The upper end of the valley is locally known as Ceval, and the name Ceval Spitze is given by the herdsmen, somewhat at random, to one or other of the summits visible from below. Hence have originated the names Zefall Sp., and Zufall Sp., appearing on most maps, but tending only to perpetuate confusion. Several hütten, or châlets, are here occupied in summer. The path keeps mostly to the l. bank of the *Plima*, as the main torrent is called, passes a chapel called *Maria Schmelz* (5,125′), and in about 2½ hrs. from the foot of the glacier reaches the first permanent dwellings. In the first house dwells Sebastian Janiger, a well-known chamois hunter, the best guide in this district. He is an excellent ice-man, but not sufficiently sensible of the advantages of the rope and ice-axe, and is apt to lose precious time in the earlier part of a day's walk.

Of the numerous lateral glens passed in the way, the most important is that of the *Soybach*, a savage ravine opening on the SE. side of the valley. Two passes lead that way to St. Gertrud at the head of the Ultenthal (Rte. G). Both are said to lie in the midst of very striking scenery. If the traveller has not lost time in descending the Langenferner, he will in 9½ hrs. steady walking from Sta. Catarina reach *Gond* (4,042′), the highest hamlet in the valley. About 1 m. lower, and on the l. bank of the *Plima*, is the principal church, with an inn of the poorest class beside it, and a group of houses called *Thal*. The traveller need not here cross the stream, as there is a good path on the rt. bank that will lead him in 1 hr. from Gond to the mineral spring called *Salt* (3,724′) where he will find clean and cheap, but rather rough and poor, accommodation in a small establishment frequented by a few patients. The water is strongly impregnated with sulphate of iron and other salts. This place is very near the opening of the valley. *Morter*, standing at the point where it opens into the Vintschgau, is but ½ hr. below the mineral spring. From that village the traveller proceeding to Meran should take the country road to *Latsch* (Inns: Post; Rössli), the nearest post-station on the high road from Landeck to Botzen (§ 48), about 1 hr. distant from Morter. If his course be towards the head of the Vintschgau, he should go directly from Morter to Goldrain, and thence follow the high road to Schlanders, about 1½ hr. from Morter. The entrance to the Martellthal from this side is very picturesque. The fine peak seen to the l. is the *Hasenohr* (10,675′), the highest point of the group which is collectively called Flatschberg.

Ascent of the Königs Spitze (12,646′) *and the Monte Cevedale* (12,505′). The Cevedale Pass above described lies be-

tween two peaks that both offer many attractions to mountaineers—the first, by its greater height and bolder form; the second, by its more central position, which overlooks the little-known recesses of the snowy range dividing the Val della Mare from the Forno Glacier.

The Königs Sp had preserved its reputation for inaccessibility until 1864, though its summit had been reached ten years before by a monk named Steinberger, on whom the mantle of Placidus a Spescha seems to have fallen in this century. Alone, and very imperfectly acquainted with the topography of the district, he made his way from the Stelvio Pass across the Madatsch Joch (?), and the snow-fields extending on the S. side of the ridge from thence to the peak of the Königs Sp. Achieving the ascent by the SE. arête, he returned on the same day to Sta. Maria on the Stelvio road (Rte. A). In 1864 Mr. Tuckett, with Messrs. E. and H. Buxton, effected the ascent, of which an account is given in the 8th No. of the 'Alpine Journal.' Ascending by W. side of the Cedeh Glacier, and the snow-slopes descending from the peak, they struck the SE. arête about 1,000 ft. below the top. Though steep, the remainder of the way presented no serious obstacle, except from the violence of the wind, which allowed them to remain but a few minutes at the top. In descending they followed the SE. arête to a point lower down than that at which they first struck it, till they reached a well-marked notch in the ridge, which Mr. Tuckett has called Königs Joch. From thence the descent to the Sulden Glacier was over crumbling rocks of dolomite, dangerously loose and steep. It cannot be recommended as a way to Sulden. It is far better to descend to the plateau of the Cevedale Pass, and cross by the Janiger Scharte (see above). Since Mr. Tuckett's ascent the peak has been attained several times.

The first ascent of the *Monte Cevedale* (12,505′) was made by M. Von Mojsisovics in 1864, with Janiger as guide. In a violent storm he attained with difficulty the E. peak. This is surpassed by the SW. peak, reached in 1866 by Messrs. Tuckett and F. Browne. Having ascended to the Vedretta di Tschengels, an affluent of the Forno Glacier, this was traversed, and they climbed the ridge connecting the Cevedale with the Pallon della Mare to a depression some way S. of its lowest point. Thence there is no difficulty in descending eastward to Val della Mare, either by the Vedretta Rossa, or the V. della Mare. First turning S., the travellers reached the summit of the *Pallon della Mare* (12,038′), then returning, and traversed the long ridge leading to the Cevedale. The ridge in question may be passed at various points. The easiest way (Passo della Fornaccia of Tuckett) is apparently the Passo della Mare of Lt. Payer's map, 11,148 ft. in height.

Route D.

GLACIER PASSES FROM SANTA CATARINA TO PRAD.

The activity of the mountaineers named in the last Rte. has opened out several new and tolerably direct ways from Val Furva to the Stilfserthal (Rte. A), without resorting to the high road. None of these should be undertaken without efficient guides.

1. *By the Madatsch Joch* (10,750′?). This way is by the snow col between the Monte Cristallo and the Southern Madatsch Spitze. It was approached from the W. by Mr. Tuckett and his companions in 1864, by the *Val di Vitelli* (Rte. A), and the great *Vedretta di Vitelli*, which fills the head of the glen; but it can be attained in less time from the summit of the Stelvio Pass by a traveller who has slept at Sta. Maria, or even at Trafoi. The descent to the Val di Zebru is steep.

but does not seem to be very difficult. The shortest course is doubtless to descend directly into the last-named valley, and to reach Sta. Catarina by the road from S. Gottardo (Rte. B). A more interesting way was selected by Mr. Tuckett's party. Instead of descending the glacier (named by Mr. Tuckett *Vedretta di Cristallo*), they crossed it in a direction but little S. of E., and crossing a low ridge struck upon another small glacier, intermediate between the last and the more considerable *Zebru Glacier*, covering the S. slopes of the Kl. Zebru. They then descended diagonally, reached the vast slopes of débris that overhang the Val di Zebru, crossed these nearly at a level, traversed the narrow icy tongue of the Zebru Glacier, and finally, by a gradual ascent, reached the lowest point in the ridge connecting the Monte Confinale with the Königs Sp. This pass, connecting Val di Zebru with Val di Forno, is called by Mr. Tuckett *Passo di Zebru* (9,700′?). It was reached in 5 hrs. from the Madatsch Joch, and in $2\frac{3}{4}$ hrs. more Sta. Catarina was reached by the Val Forno.

2. *By the Trafoier Joch.* In 1867 Messrs. Tuckett and E. Howard, after finding good night-quarters at the first châlets above Prato Beghino in Val di Zebru, ascended towards the rt. bank of the glacier that lies on the S. slope of the Thurwieser Sp., and then bore somewhat to the l. Attempting to cross a rocky ridge on the W. of their course, they lost 2 hrs., and had to return and mount to a snow sattel above this ridge. The way then lay some way over névé in the direction of the Madatsch Joch, till, bearing to the rt., they reached the col between the Schnee Glocke and the Madatsch Sp. This was named *Trafoier Joch* (about 10,800′). The top of the Schnee Glocke, previously reached by Lt. Payer, was attained, and they returned to the pass. The descent, which might be difficult at a later season, was made by a series of glissades, till, skirting the slopes of the N. Madatsch Sp., they reached the lower part of the Madatsch Glacier and the Stelvio road.

3. *By the Orteler Joch* (11,000′?). This pass lies over the broad col between the Thurwieser Sp. and the Kl. Zebru. This is easy of access from the Val di Zebru, but very difficult on the N. side towards Trafoi. It was traversed from that side in 1865 by Messrs. Tuckett, Freshfield, Fox, and Backhouse, with François Devouassoud and Peter Michel. The ascent was commenced by the very steep rocks of the Ziegerpalfen, after which the Lower Trafoi Glacier was crossed to some slopes of débris beneath the cliffs of the Orteler Sp. After some time it was necessary to return to the ice, and force a way through huge broken séracs till the upper névé was attained. One hr. more, ending with a short but steep climb up a snow wall, took them to the top of the pass in $7\frac{1}{2}$ hrs. from Trafoi. On the rt. hand rises a snow summit, which is an eastern offshoot from the Thurwieser Sp., and on the l. the ridge connecting the Orteler Sp. with the Kl. Zebru. Time did not allow the ascent of the latter peak; but the party mounted about 500 ft. to the lowest point in the ridge connecting it with the Orteler Sp.

Bearing to the rt. from the pass, the travellers reached the rt. lateral moraine of the Zebru Glacier in $1\frac{1}{4}$ hr., and continued the descent to Val di Zebru by steep slopes, reaching S. Gottardo, at the junction of that glen with Val Furva, in $3\frac{1}{4}$ hrs. from the summit.

Mr. Tuckett thinks that time would be saved by making the first part of the ascent by the E. side of the Lower Trafoi Glacier, by the same course that was taken in some of the earlier ascents of the Orteler Sp. Until it is better known, this pass should be attempted only from the side of Trafoi or Sulden.

3. *By the Sulden Glacier.* It will be inferred from the description of the Passo Cevedale in Rte. C that it affords the most direct and easiest glacier route

from Sta. Catarina to the Suldenthal. From the summit of that pass (4½ hrs. from Sta. Catarina) easy slopes of névé (not on that account to be traversed without a rope) lead to the *Janiger Scharte*, a ridge E. of the *Sulden Spitze* (11,109′), dividing the névé of the Langenferner from the head of the Sulden Glacier. The descent towards the latter is rather steep, and may sometimes require the ice-axe. For a notice of the Sulden Gl. see Rte. F. The village of St. Gertrud is reached in 3½ hrs., exclusive of halts, from the Passo Cevedale.

In 1866 Messrs. J. D. Finney and F. A. Lewin ascended from Sulden to the ridge already reached by Mr. Tuckett, connecting the Orteler Sp. with the Kl. Zebru, thus proving that the Orteler Joch may be taken from Sulden as well as from Trafoi. But the ascent cost nearly 5 hrs. of step-cutting in hard ice. The same party made the second ascent of the Kl. Zebru, and reached Sta. Catarina in 16 hrs. from Sulden.

Route E.

LAAS TO SULDEN, BY THE LAASERTHAL.

The *Laaserthal* is a short valley, enclosed by an irregular group of high peaks, that separate it on one side from the Martellthal, and on the other from the *Suldenthal*. For some notes respecting it, the editor is much indebted to M. von Mojsisovics, one of the most active explorers of this district. The valley seems to offer a choice of several fine passes leading to Sulden, and commanding grand views of the Orteler Sp. and the range enclosing the Sulden Glacier.

The *Laaserthal* opens opposite to the village of *Laas* in the Vintschgau (§ 48). It contains no permanent dwellings, but the upper end is frequented in summer by herdsmen. Mounting steeply by the l. bank of the Laaserbach, the track enters the valley, which for a considerable distance is a mere barren ravine. In 2½ hours the pastures of the *Laaseralm* are reached. These lie but a short distance from the foot of the *Laaserthal-ferner*, a very fine glacier that flows northward into the head of the valley. The most interesting way to Sulden is probably that by the NW. branch of the valley. For some way a path runs through this desolate glen, filled with huge blocks of gneiss, till, after ascending 1 h. the way turns sharply to the l., and a stiff climb over steep rocky slopes leads to the *Ofenwand Scharte*, a depression in the range of the *Hochofenwand*. The highest point, 11,558 ft. above the sea, lies some way to the S., and is separated from the pass by the *Angelus Spitze* (10,982′). On the W. side the descent is by the rt. bank of the *Zaiferner*, and the Zaithal, a short glen leading to Sulden in 5 hrs. from the Laaseralm. The ridge seen to the rt. from the summit of the pass is the Tschengelser Hochwand, of which the highest point is the *Kompatsch* (11,065′).

The other, rather longer, way from the Laaserthal to Sulden mounts by the rocks on the rt. bank of the *Laaserthal-ferner* to the upper plateau of that glacier, which leads to the *Laaserthal Joch*. This lies between the *Vertrain Sp.* (11,371′) and the *Mittlere Peder Sp.* (11,349′). The former, which must command a very extensive view, may best be ascended from the pass. The descent to Sulden lies over the *Rosimferner*, a glacier filling the head of the *Rosimthal*, a tributary of the Suldenthal. The ice must be left on the rt. bank above the lower ice-fall, and the slopes of the Vorder Vertrain Sp. descended to the main valley, which is reached near to St. Gertrud.

Several passes connect the Laaserthal with the Martellthal. By bearing to the l. from the *Laaserferner Joch* it is possible to reach the *Peder Joch*, between the Mittlere and Innere Pederspitze, and so descend by the *Pederthal* to the upper end of the Martellthal.

Another way mounts eastward from

the Laaseralm, and crosses the *Schluder Scharte*, descending into Martell between the Orgelspitze and Rosskopf. The Martellthal is reached at a point between Maria Schmelz and Gond in 6 hrs. from the Laaseralm.

The *Orgelspitze*, commanding one of the finest views in this district, is easily reached from the summit of the Schluder Scharte, or directly from Thal in the Martellthal.

Route F.

MALÈ TO TRAFOI, BY THE SULDENTHAL.

One of the finest lateral valleys of the Val di Sole is that of Rabbi, and it is rendered more easy of access than the others owing to the existence of a strong chalybeate spring, which annually draws a large number of Italian and German visitors. By this, or by the Val della Mare, noticed in Rte. B, the mountaineer may follow an interesting route to the fine valleys of Martell and Sulden by the glaciers that extend almost continuously between the upper extremities of these four valleys.

The chief difficulty arises from the want of competent guides. Janiger of the Martellthal, mentioned in Rte C, knows thoroughly the glaciers of Martell and Sulden, but probably not those of Val di Rabbi and Val della Mare. D. Veneri and Binder of Cogolo, and a man named Kuens, at Vermiglio, are said to have some acquaintance with the glaciers at the head of Val di Sole, but in Val di Rabbi there is no tolerable guide known to the writer. A man who undertook that calling in 1860 completely lost his way, and showed himself utterly incompetent in all respects. In fine weather local knowledge is of secondary importance; but when the clouds lie low, it can with difficulty be dispensed with. The writer has little doubt but that the distance from Rabbi to Sulden can be accomplished in one long day, and the way from Pejo to Sulden would be easier in good weather. It is a more advisable course to sleep at some of the châlets in the upper Martellthal, leaving time to enjoy the fine scenery. As the way by Rabbi is probably the more interesting, it is that first described here.

1. *By Rabbi, and the Saënt Pass* (9,954′). The Val di Rabbi joins the Val di Sole a short way below Malè (Rte B), and a tolerable but rough char-road has been carried along the l. bank of the torrent. For the pedestrian there is a rather shorter and more shaded way by a path that mounts steeply on the rt. bank of the Rabbies torrent, and finally crosses to the l. bank nearly 2 hrs. from Malè. The valley is a narrow glen, and the scenery wild rather than grand, as the higher peaks do not come into view. The ascent is in places rather steep, till the traveller attains *S. Bernardo*, the principal village. A little farther he crosses to the rt. bank, and in about 3 hrs. from Malè reaches *Rabbi* (4,035′), a village composed of inns, standing on level ground on either side of the Rabbies torrent. The accommodation is rather primitive, and even in the two principal inns (Al Fonte and Palazzo), the rooms are very rough, and the beds, though clean, far from comfortable. The first-named is considered the best inn. Dinner is served at noon, and supper about sunset: for these meals, and a small bed-room, the daily charge is 3 florins in paper money, equal to about 5 shillings—a rate considered high in the Tyrol. The people of the house and adjoining café are very civil, and make no objection to

getting up and preparing breakfast for mountaineers at 3 A.M. Though the position is by no means equal to Sta. Catarina or Trafoi, this place may well serve as head-quarters for exploring the neighbouring peaks and glaciers. [There is a way to *Pejo* over the *Passo di Cercen* (8,616′), traversed by Mr. T. Rutt in 1864. The summit, reached through a glen opening WSW. of Rabbi in 4 hrs., commands a very grand view. 2½ hrs. suffice for the descent to Cogolo, ¾ hr. from the Baths of Pejo.] Near Rabbi the botanist may gather *Primula longiflora*, *Thalictrum fœtidum*, and other rare plants. The upper part of Val di Rabbi consists of four successive steps, each lying nearly level, and separated from the next by a very steep barrier of rock. The ascent is in a NNW. direction; but towards the head of the valley the main branch bends first to NW., then nearly due W. The only way to reach the Suldenthal from Rabbi is by crossing the head of the Martellthal, and the only known pass lies considerably E. of the *Venezia Spitze*, or Pizzo Venezia (11,095′), one of the boldest peaks of this group, though surpassed in height by several others.

On approaching the head of the valley—locally called Saënt—the traveller should follow a course nearly due N., passing near to a bold summit which is a northern outlyer from the *Eggen Spitze* (11,263′). The latter, which is the highest of the peaks enclosing the Val di Rabbi, lies someway S. of the pass, and separates Säent from the upper end of the Ultenthal. The *Saënt Pass*, also called *Gramsen Joch*, commands a very fine view of the surrounding Alps; and this may be further extended by ascending the *Hintere Rothspitze* (10,532′). From that summit it is also possible to reach Val della Mare by the Vedretta di Venezia. In about 6 hrs.' steady walking from Rabbi, exclusive of halts, the Martellthal is reached about halfway between the Cevalhütten and Maria Schmelz (Rte. C).

To reach the Suldenthal from the head of the Martellthal, the traveller has a choice between three passes, of which two are quite easy. These are approached by a short lateral glen, called *Madritschthal*, which opens nearly opposite the shepherds' huts known as Cevalhütten. The path is nearly level till it reaches a transverse mound (ancient moraine?) that stretches across the glen. Above this, at the head of the valley, are seen three slopes of névé, or incipient glaciers, of which the central one leads to the *Madritsch Joch* (10,252′). This lies between the *Madritsch Spitze* to the l., and the *Schöntauf Spitze* (10,893′) to the rt., and is reached in 2 hrs. from Ceval. It commands an extremely favourable view of the Orteler, Kl. Zebru, and Königs Sp., which rise very grandly above the wide expanse of the Sulden Glacier. In the opposite direction the peaks of the Zufrid range are also well seen. A rather steep descent leads down to the *Suldenferner*, the great glacier that encloses for a space of several miles the head of the Suldenthal. It is formed by the welding together of a number of comparatively short ice-streams that descend from the flanks of the range connecting the Orteler Sp. with the Madritsch Sp. The consequence is, that its breadth is at least three times as great as its utmost length, which may be measured from the foot of the Königs Sp. to the lowest point that it reaches in the Sulden valley. The result of this peculiar formation is that a season that would occasion a slight increase in an ordinary glacier, here produce a multiplied effect, inasmuch as the extra flow from each separate portion is accumulated nearly at a single point. In fact this glacier is famous for its extraordinary vicissitudes, for which an unsatisfactory explanation was suggested in the first edition of this work.

Keeping somewhat to the rt., the traveller quits the glacier and reaches the Gampenhof. This is a small group of houses, lying in the fork between

the main stream of the Suldenbach and that issuing from the Rosimthal, a lateral glen originating on the W. side of the Peder Spitze. For about ¼ m. above the Gampenhof, the torrent from the Sulden Glacier flows through a gorge whose slopes on either side are bare of vegetation. Through this space the glacier advanced very rapidly in 1817, halting only when within 50 yards of the Gampenhof. Old larches and arollas, as well as the herbaceous vegetation, were swept away, leaving the soil covered with glacier mud and moraine débris. Since that year the glacier has gradually retired. In 1855, Prof. Simony found that masses of old glacier ice, preserved from melting by the overlying débris, lay far below the present termination of the glacier, and still served in one place to bridge over the torrent. A level path through meadows along the l. bank of the main stream, leads in ½ hr. from Gampenhof to *St. Gertrud* (6,057′), the only village in the valley —not to be confounded with that of the same name in the Ultenthal (Rte G). An inn has lately been opened, but better quarters are, perhaps, afforded by the parish priest, whose house stands near the church. This place is reached in 4½ hrs. from the Cevalhütten.

The name *Sulden Joch* has been often given to the pass above described, between the Schöntauf Sp. and the Madritsch Sp., but properly belongs to another pass lying on the NE. side of the first-named summit, between it and the *Innere Peder Sp.* (10,768′). It is approached through the Madritschthal, and is of about the same height and length as the Madritsch Joch; but the view is inferior. From the summit of either pass, the *Schöntauf Spitze* (10,893′) is easily climbed in ½ hr., and rewards the slight effort by a magnificent panoramic view.

Somewhat longer, and decidedly more difficult, than either of the above named passes, is the *Peder Joch*, between the Innere Peder Sp. and the Platten Sp., approached through the Pederthal, which opens into the Martellthal about 1 hr. lower down than the Madritschthal. Keeping well to the l., or about due W., the traveller descends into the *Rosimthal*, which joins the Suldenthal at Gampenhof. As mentioned in Rte. E, a course about due N. from the Peder Joch will lead the traveller by the Laaserferner Joch to the head of the Laaserthal.

2. *By the Val della Mare.* The existence of a pass from the Val della Mare to the Martellthal has been long known to the natives, and is affirmed by the Austrian Map of Tyrol, but no authentic information on the subject was available until the Jahrbuch for 1865 of the Austrian Alpine Club contained an account of the pass in question by Lt.-Col. Bauer, who took as guides two incompetent men named Binder, of Cogolo. The pass is called *Hohenferner Joch*, or in Italian, Passo della Vedretta Alta, and is 9,904 ft. in height. The more easterly and easier pass, mentioned below, is higher by 608 ft.

Starting from Pelizzano in Val di Sole (Rte. B), the traveller follows the char-road along the rt. bank, till some way beyond Cusiano he crosses to the l. bank of the Nos, where a tolerable road leads him up to *Cogolo*, a small village with a rough inn, just below the junction of Val della Mare with the Val del Monte, reached in 2 hrs. from Pelizzano. Crossing the branch of the Nos, issuing from the former valley, the way lies about due N., keeping to a rough cart-road that leads to a saw-mill erected at the junction of a glacier torrent from the Vios Spitze, that descends through a lateral glen called Vallenaja.

The *Val della Mare* is one of the wildest and most savage glens in this part of the Alps, completely enclosed by the snowy range that extends from the Vios Sp. to the Venezia Sp. As the traveller ascends, the snow pass between the Cevedale and the last-named peak, over which lies the way to Martell, is constantly in view. Be-

yond the saw-mill the ground is to a great extent covered with débris, until the highest of the successive steps forming the floor of the valley is attained. Here the three torrents that join to make up this branch of the Nos unite their waters. Lieut.-Col. Bauer was led by his guides along the westernmost of these streams, but he rightly points out that the course indicated on the Government Map, which follows the central stream, should be preferred. The ascent does not seem troublesome, and there are no glacier difficulties to contend with. A far preferable course to that indicated in the Jahrbuch, is to bear to the rt., towards the W. shoulder of the Venezia Sp., passing between two stone men erected on the summit of the ridge. From this point the *Venezia Spitze* (11,095′) may be climbed in ¾ hr. Even from the col the view is very grand. The descent on the Martell side is over the eastern affluent of the *Hohenferner*, and by that way no difficulty worthy of notice is encountered. The main portion of this glacier, after descending for some distance with a gentle slope towards the head of the Martellthal, sinks in steep and broken terraces of ice by no means easy to traverse. The Cevalhütten are reached by this pass in 6 hrs., exclusive of halts, from Cogolo. From thence the way to Sulden is that already described.

Having reached St. Gertrud by some combination of the above mentioned passes, the traveller pressed for time may leave on his rt. hand the bridge at St. Gertrud, and follow the path along the l. bank. The valley contracts gradually as the descent becomes steeper; the path passes to the rt. bank, and in about 2 hrs. from St. Gertrud (or 2½ hrs. when ascending the valley), reaches *Gomagoi*, on the high road between Prad and Trafoi (Rte. A).

The traveller will, however, do wisely to give a day to the noble scenery of the Sulden valley, which rivals, without much resembling, that of the adjoining valley of Trafoi. Going direct from St. Gertrud towards the base of the Orteler Sp., he will reach the spot at the base of its gigantic precipices that has received the local name '*End der Welt.*' This has been erroneously attributed, on many maps, to the upper part of the Sulden Glacier, where the name becomes unmeaning.

The reader will observe that many statements made in this and the foregoing Rtes. are inconsistent with the published maps, and even on some points with that of Mr. Tuckett in the 8th number of the Alpine Journal, the fact being that no existing map represents the form of the mountains accurately, and that the utmost confusion has prevailed as to the correct nomenclature. One source of numerous errors arises from the resemblance of the Sulden Sp., a snow cone seen at the SE. end of the Sulden Glacier, to the much higher but more distant Monte Cevedale. From a corruption of the latter name arose the designation Zufall Spitze, which has been attributed by turns to one or other of the peaks at the head of the Martellthal.

Mr. Tuckett has indicated a very fine high-level route from Pejo to Sulden, certainly easier, in favourable weather, than that here mentioned. The Vedretta della Mare reaches up to the depression (about 12,200′) between the two peaks of the Cevedale; descending thence, gentle slopes of névé lead to the Janiger Scharte (Rte. D), and so to the Suldenthal.

Route G.

RABBI TO MERAN, BY THE ULTENTHAL.

	Hrs.' walking	Eng. miles
St. Gertrud . .	5	12½
Mitterbad . . .	4	12
St. Pankraz . .	1⅓	4½
Meran . . .	3⅓	10½
	14	39½

Nearly parallel to the Martellthal, described in Rte. C, is the *Ultenthal*, a still longer and more important valley,

whose junction with the Vintschgau is a little below Meran. The ridge separating them appears to be a NW. prolongation of the high chain extending from the Corno dei Tre Signori to the Venezia Spitze and Eggen Spitze at the head of Val di Rabbi. The scenery is not equal to that of the Martellthal, but it is far more accessible, and the valley may well be taken by a moderate walker in the way between Rabbi and Meran. The upper end of the Ultenthal is chiefly composed of mica-schist; but porphyry and granite are seen in several places as the traveller descends the valley. The best accommodation on the way is at the Baths of Mitterbad; but very fair quarters are, or were, found at Kuppelwiese, within 7½ hrs.' steady walking from Rabbi.

There are many passes by which it is possible to reach the Ultenthal from the Val di Rabbi or Val di Sole. The most interesting of these, and the most direct from Rabbi, is by the *Kirchberger Joch* (8,134′), nearly due N. of that place. At the summit the path traverses a cleft on the E. side of the Pizzo Sassfora. The torrent which has been followed during the ascent, issues from the *Corvo See*, a lake lying on a plateau N. of the range dividing the valleys of Ulten and Rabbi; but instead of being drained in what appears the natural course towards the Ultenthal, the waters escape in the opposite direction through the cleft. The descent from the lake lies NE., through a branch of the Ulten valley called *Kirchbergerthal*, opening close to the highest village, *St. Gertrud* (Inn, poor), 4,949 ft. above the sea.

[Two fine passes lead from St. Gertrud to the upper part of the Martellthal, to both of which the name Soyjoch has been vaguely given. This is especially inappropriate to the southernmost pass, properly called *Zufrid Joch* (9,905′) which traverses the ridge SW. of the *Zufrid Spitze* (11,262′). This peak may be ascended from the summit of the pass. The way to it lies through a lateral glen—Zufridthal—WSW. of St. Gertrud, leading to the *Zufridferner*, over which glacier lies the descent to the Marteller Alm. The other pass, which is lower, and equally interesting, is by the *Bilsberg Joch* (9,360′). This lies on the NE. side of the Zufrid Sp. On the Ulten side the botanist may gather the very rare *Carex Vahlii*. The faintly marked track on the Martell side leads to Gond, 1 hr. above Salt (Rte C.).]

The most interesting excursion from the head of the Ultenthal is the ascent of the *Eggen Spitze* (11,263′), whose highest peak is reached in 7 hrs. from St. Gertrud. As it exceeds in height all the neighbouring summits, it naturally commands an unbroken panoramic view of great extent.

The descent from St. Gertrud is by a somewhat beaten track, as during the summer season there is frequent passage between Rabbi and Mitterbad. Many of the patients using the baths at the latter place are recommended to drink the waters of Rabbi, which are bottled and carried across the pass on men's backs. About 1¼ hr. below St. Gertrud is *St. Nicolaus*, where a track to Val di Non mounts SSE. through the *Neinerthal*. *Kuppelwiese*, where there is, or was, a fair mountain inn, is about ¾ hr. below St. Nicolaus. This is said to be the most picturesque position in the valley, and is conveniently situated for the ascent of the *Hasenohr* (10,673′). [Unlike most of the mountains of this district, this overlooks a considerable reach of the fertile and thickly peopled valley of the Adige, presenting a striking contrast to the great snowy ranges that rise to the N. and SW. The way lies by a sheep pasture called Wolfsgrube, and the summit is easily reached in 5½ hrs. As the peak is at least equally accessible from the Martell side, it may be taken on the way from Kuppelwiese to Salt.] The torrent, descending from the N., issues from the Kuppelwieserthal, through which lies a track to Latsch in the Vintschgau. Below Kuppelwiese there is a choice of paths. The

A much more interesting way than that by the Gampen may be taken from Cles to Kaltern, in the valley of the Adige below Botzen. This lies through the *Val Romedio*, opening about due E. of Cles, the lower end being a gorge enclosed by steep limestone rocks. It is formed by the union of two branches: the one mounting to NE. is called *Val Rufredo*; the other, SE. branch, is Val Verde. In the angle between them, perched on rocks so steep as to be scarcely accessible, is the Hermitage of San Romedio. This is a most curious building, containing five chapels standing one over the other, the highest of them commanding a singular view into the giddy depths below. There is a little inn at the foot of the tower, where some refreshment is found.

Following the NE. branch of the valley, the traveller passes *Amblar*, whence may be made the ascent of *Monte Roen* (6,919′), the highest point of the Mendola range, and reaches *Rufredo*, the last village. This is ¾ hr. below the pass of *Mendelscharte* (4,964′), whence it is easy to descend to Kaltern; but the shorter way to Botzen would probably be to bear to the l. towards Eppan.

The valley of the Adige between Botzen and Verona is described in § 57.

Route K.

BORMIO TO SANTA MARIA.

Having in the preceding Rtes. given some account of the principal valleys of the Orteler Alps, it is now necessary to notice briefly the ranges on the N. side of the Stelvio Pass, lying between the main road described in Rte. A and the Lower Engadine. These ranges lie partly in Switzerland, and partly in Tyrol; but the boundary is in great part purely arbitrary, though in the main it keeps to the natural rule which would give the tributaries of the Engadine to Switzerland, and those of the Vintschgau to Tyrol. The chief exception to this rule is in regard to the valley of the Rammbach, a considerable torrent that joins the Etsch, or Upper Adige, near Glurns. The greater part of the valley in question belongs to Switzerland, and above the dividing line it is called in the local Romantsch dialect, *Val Mustair*—Germ. *Münsterthal*. The valley is described in the next Rte., and we here merely notice the passes by which the principal village—Münster—may be reached from Bormio, the natural centre of this district.

1. *By the Umbrail Pass*, or *Wormser Joch*. It was mentioned in Rte. A, that the summit of this pass lies but a few ft. above the post-house, or Cantoniera, of Sta. Maria on the Stelvio road, and that it affords the natural line of connection between the head of the valley of the Adda and the upper end of the Vintschgau. The summit of the pass is 8,342 ft. above the sea. It overlooks a short glen called *Val Muranza*, through which a torrent flows nearly due N. to join the Rammbach. The track, which is well marked and passable for beasts of burden, descends at first by rather steep zigzags, then follows the course of the torrent for about 1 hr., and finally descends on its right bank by a rather rapid declivity to *Santa Maria* (4,519), noticed in Rte. L.

2. *By Val Fraële.* In ascending towards the Stelvio Pass, a torrent is seen to break out from a narrow cleft on the l. of the high road about 1 m. above the Baths of Bormio. This, which is usually considered to be the main stream of the Adda, descends ESE. from a highland valley called *Val Fraële.* The gorge through which the stream issues to join the Braulio torrent is impassable, but a rather steep sledge-track, used to bring down iron ore, mounts the slopes, and leads to the upper part of the valley. Most persons bound from Bormio to Val Fraële prefer an easier way by the Val di Dentro (§ 36, Rte. L). Soon after crossing the Adda by the bridge at the iron-works below the Baths of Bormio, the traveller finds a tolerably good cart-track, which mounts gradually till in 1 hr. from the Baths it reaches a hollow, whence a short but rather steep ascent leads to the Pass of *Le Scale* (6,516′). The greater part of the surface of this broad and deep depression is occupied by a picturesque little lake. The cart-track passes above its N. shore and leads by an easy descent to the middle part of Val Fraële. This shows a considerable tract of alpine pasture, inhabited only in summer by a few herdsmen. Its upper end is connected by no less than three passes with as many tributaries of the Spöl, one of the chief affluents of the Inn.

One of these passes, leading to Trepalle and Livigno, is reached by turning abruptly to the l., or nearly due SW., through a glen called Val Gettino, and then bearing W. over a depression leading directly to the former village.

The second pass lies due W. of the oratory of San Giacomo, nearly at the head of Val Fraële. After passing a small pool or tarn, called the source of the Adda, a very slight ascent leads over the ridge to another similar pool that is drained in the opposite direction. A path above the rt. bank leads thence down to the junction of Val di Trepalle with Val Livigno (see § 36, Rte. M).

The third pass, 6,431 ft. in height, is the lowest but one between the basin of the Adda and that of the Inn. The path mounts NW. from S. Giacomo over a low grassy ridge, and then descends no less gently to the Bruna torrent which flows NNW. into the Spöl at the point where it enters Swiss territory.

The way from Val Fraële to Val Mustair is over the last-mentioned pass: but instead of descending along the l. bank towards the Spöl, the traveller must keep to the rt., and ascend along a tributary stream which joins the Bruna at a very acute angle. The way lies through Val Mora, a glen lying in Swiss territory. Mounting slightly along the l. bank in a direction but little E. of N., after 1 hr. the path crosses to the rt. bank of the torrent, and bends gradually to the E. Before long the glen opens out to ESE., and the traveller sees before him a highland pastoral valley, parallel to the Val Fraële, and bearing the same name. This, which for the sake of distinction we shall call the Swiss Val Fraële, is more alpine in character, and the level is rather higher. The principal châlets, called Münster Alpen, stand at 7,001 ft. above the sea. A very gradual ascent from these châlets to the pass of *Dossrotond* (7,249′) leads into one of the branches of Val Mustair. It will be seen on the map that the pass of Dossrotond lies due N., and but $4\frac{1}{2}$ m. distant in a straight line from the lower end of the Italian Val Fraële, and that the long circuit made in following the route here described has been effected in order to pass round the range of high peaks whose principal summits are *Piz Murterol* (10,423′) and *Piz Ciumbraida* (10,246′). A rather rapid descent leads from the Dossrotond Pass to the main valley of the Rammbach, which is reached between the adjoining villages of Valcava and Santa Maria, about $\frac{1}{4}$ m. from the latter place.

3. *By the Passo dei Pastori.* Instead of making a wide détour, the mountaineer may take a nearly direct course from the lower end of Val Fraële to Santa Maria. A little above the gorge through which the Adda issues from

Val Fraële, it is joined by a torrent that descends from the N. through an alpine glen called Val Forcola. To reach this from Bormio, the traveller must follow the sledge-track mentioned above, that mounts on the N. side of the gorge of Val Fraële, and then descend a little to cross the torrent from Val Forcola before attempting to ascend into that wild glen. The Val Forcola passes under the W. side of Monte Braulio, and leads to a high pass in the ridge connecting Piz Umbrail with Piz Ciumbraida. The measurement, 2,860 metres = 9,383 ft, indicated on the Swiss Federal map, perhaps refers to a point some way above the pass, but its height probably exceeds 9,000 ft. The descent on the N. side is by a rather large tarn, called Lai da Rims (7,848′), and joins the track from Val Fraële, described above, about half-way between Dossrotond and Sta. Maria.

Route L.

ZERNETZ TO MALS, BY THE OFEN PASS AND VAL MUSTAIR.

Rough road, in great part passable for light cars. About 10½ Swiss leagues.

This is one of the easiest passes over the main chain of the Alps, leading, as it does, from the Inn to the Adige; but it is very little frequented by strangers. A moderate outlay would make the road fit for light carriages throughout, and the projected improvements will probably soon be effected. The upper part of the pass is somewhat monotonous; but there is fine scenery on the way to it, and many objects of interest in its vicinity.

It has been said in § 36, Rte. M, that the remarkable defile through which the Spöl descends from Val Livigno to join the Inn is in great part completely impassable. The road from Zernetz, after following the rt. bank for about 2 m., begins to mount above the stream, and gradually gains a much higher level, losing the defile from view, and leaving it at some distance to the rt. After making two circuits, to pass lateral torrents, it descends, about 3 hrs. from Zernetz, to the stream flowing from the Ofen Pass to the defile of the Spöl. Save a few patches of alpine pasture, the wild valley is clothed with forest throughout its entire length, and contains but one solitary house—the well-known mountain inn known as the *Ofen Wirthshaus* (5,919′). Though it offers but poor accommodation, it is well spoken of by all travellers, on account of the friendly and hearty reception given them by the host and his family. He is a famous sportsman, and has shot a large number of bears, which abound in the neighbouring mountains, and make havoc among the herds. [Tarasp may be reached from hence by the *Furcletta*, a pass connecting the head of *Val del Buotsch*, a short glen opening 1 m. E. of the inn, with the head of Val Plafna (§ 36, Rte. A).] The track now ascends gently, a little S. of E., along the rt. bank of the torrent, till in about 1½ hr. it reaches the base of the low ridge separating the Ofen glen from the head of Val Mustair. The name Buffalora, or Boffalora, has been sometimes applied to the pass leading to Münster (here called Ofen Pass), sometimes to a higher pass lying due S., by which the traveller may reach Val Fraële and Bormio. A short ascent from the point where the track

leaves the stream leads to the somewhat dreary *Ofen Pass* (7,070′). The summit is an undulating plateau, and tracks lead in various directions (one of them to the head of Val Scarla), so that it is easy to miss the way when there is snow on the ground or the clouds lie low. To reach the *Val Mustair*, or *Münsterthal*, the general direction hitherto followed through the valley is adhered to; but the path winds amidst the inequalities of the ground. The mountains of this district are partly covered with the *Pinus Mughus* (Germ. *Legföhren* or *Kniehulz*), whose stems and branches, lying on the surface of the rocks, afford cover to bears and other wild animals, while they oppose a serious obstacle to the pedestrian, and even to the practised mountaineer. A rather rapid descent leads from the pass into the populous Val Mustair, which presents a marked contrast to the silent and uninhabited district through which the traveller has passed since he left Zernetz. The first village is *Cierfs* (5,459′). To the l., on the slope of the mountain, is *Lu* (6,293′), a small village at an unusual height. A path leads that way by an easy pass into Val Scarla (Rte K). The char-road descends on the rt. bank of the Rammbach to *Fuldera*, and thence to *Valcava* (4,626′), about 1½ hr. from Cierfs. This is rather less than 1 m. from *Santa Maria* (4,519′), the most populous village in the valley. The Inn is good, probably the best in Val Mustair—char to Mals; 12 fr. At a sawmill, ½ hr. below Sta Maria, the road crosses to the l. bank of the stream. Berg-falls and inundations of the torrent have done extensive mischief in the tract surrounding

Münster (3,995′), the last Swiss village. The people here are Roman Catholic, those of the upper valley being Protestant; and the name of the village comes from a famous Benedictine convent founded here by Charlemagne. It suffered cruelly, as did all the neighbouring villages, from the French, who were forced to retreat this way in 1790, after having a few weeks earlier defeated the Austrians at the head of the Vintschgau.

After crossing the frontier of Tyrol, the traveller in ½ hr. from Münster reaches *Taufers*, where he finds a population speaking German, and not over well affected towards their Swiss neighbours. The ruins of numerous castles attest the importance once attached to this valley, connected as it is by comparatively easy passes both with Switzerland and Lombardy. The pedestrian bound for Mals may leave the picturesque little town of Glurns on his rt., and go direct to Latsch, about 1 m. from Mals; but the rough char-road makes a détour by *Glurns*. *Mals* (Inns: Post; Hirsch) is described in § 48.

Route M.

SCHULS TO MALS, BY VAL SCARLA.

One of the most picturesque of the lateral valleys of the Engadine is *Val Scarla*, whose torrent joins the Inn a little above Schuls, and close to the Baths of Tarasp. It lies between mountains most of which exceed 10,000 ft. in height, and is said to

abound in fine scenery, and to produce many rare minerals. The lower valley is savage and desolate, leaving no space for houses or cultivation; but about 2½ hrs. from Schuls the traveller reaches the solitary village of the valley, named *Scarl* (5,948′), whose existence in so remote a spot is probably due to considerable mines of argentiferous lead formerly worked here. Above this the valley opens out, and alpine pastures cover the slopes. About ¾ hr. above Scarl the traveller bound for the Vintschgau leaves to his rt. the main branch of the valley, by which a path ascends to the S., and finally reaches a pass (7,385′) leading to Lu in Val Mustair. The direct way to Mals or Glurns is by a short lateral branch of the valley, through which a track mounts somewhat S. of E. to a pass called *La Cruschetta* (7,599′), lying on the S. side of two high peaks —*Piz Seesvenna* (10,568′), and *Maipitschspitz* (10,374′). From the summit a rarely-used track leads S.E. to the head of *Val Avigna*. The torrent draining this glen forms the line of frontier between Switzerland and Tyrol, and a path, keeping most of the way to the Swiss side, descends along the stream, which joins the Rammbach between Münster and Tauffers (Rte. I). Passing through the latter village, the traveller may reach Mals in about 3½ hrs. from the pass, or 9 hrs. from Schuls.

Route N.

REMÜS TO MALS, BY VAL D'UINA.

About 1½ m. above Remüs, in the Lower Engadine (§ 36, Rte. A), a bridge is thrown across the inn just below the hamlet of Crusch, and opposite the opening of *Val d'Uina*. Through this short glen there is a nearly direct way to Mals, more interesting to the mountaineer than that by Nauders. The track through Val d Uina mounts rapidly to a high plateau forming the pass of *Sur Sass* (about (7,800′), which lies on the E. side of *Piz Cristiannes* (10,236′). The descent to Mals is through the *Schlinigthal*, and in about 5½ hrs. from Remüs the traveller reaches the small village of *Schlinig*, where there is an easy descent to *Schleiss*, opposite Mals. By bearing to the l. from the pass of Sur Sass, it is easy to reach the head of the *Zerzerthal*, and descend to the Heider See, nearly 8 m. N. of Mals. See § 48, Rte. A.

CHAPTER XI.

LOMBARD ALPS.

Section 38.

BERGAMASQUE VALLEYS.

Route A — Bergamo to Tirano, by Val Seriana 449
Route B — Bergamo to Sondrio, by Val Brembana 450
Route C — Bergamo to Morbegno, by the Passo di San Marco . . 451
Route D — Piazza to Morbegno, by Val Stabina — Pizzo dei Tre Signori 452
Route E — Lecco to Bellano, by Val Sassina 453
Route F — Varenna to Introbbio — Ascent of the Grigna 455
Route G — Morbegno to Bellano, by Val Varrone 456
Route H — Introbbio to Colico — Ascent of the Monte Legnone . . 457

Section 39.

VAL CAMONICA DISTRICT.

Route A — Malè in Val di Sole to Brescia, by the Tonale Pass and Val Camonica 459
Route B — Bergamo to Breno in Val Camonica, by Lovere . . . 461
Route C — Bergamo to Breno, by Clusone 462
Route D — Lovere to Edolo, by Val di Scalve 462
Route E — Edolo to Sondrio, by the Aprica Pass 463
Route F — Ponte di Legno to Santa Catarina, by the Gavia Pass . 463
Route G — Breno to Lodrone, by the Croce Domini Pass 465
Route H — Iseo to Gardone, in Val Trompia 466
Route I — Brescia to Lodrone, by Val Trompia 466
Route K — Brescia to Vestone in Val Sabbia 467

Section 40.

ADAMELLO DISTRICT.

Route A — Malè to Salò on the Lake of Garda, by Val Rendena and the Lake of Idro 469
Route B — Pinzolo to Edolo, by Val di Genova 474
Route C — Condino to Edolo, by Val Daone 478
Route D — Tione to Riva, on the Lake of Garda 481
Route E — Lodrone to Riva, by Val Ampola and the Lake of Ledro . 482
Route F — Pieve di Ledro to Tione . . 484
Route G — Storo to Toscolano on the Lake of Garda, by Val Vestino . 485
Route H — Pinzolo to Riva, by the Bocca di Brenta, and Molveno . 486

A STRAIGHT line drawn from Colico, at the head of the Lake of Como, to Cles in Val di Non, will lie throughout close to one of the best defined lines of depression in the Alps. Deep valleys connected by low passes here mark an orographic limit which cannot be overlooked. To the S. of the Val Tellina and the Aprica Pass, a mountain range inferior in height to those of the Rhætian Alps, but unbroken by any deep gap, extends about 50 m. from W. to E. That this line of disturbance of the surface is of high geological antiquity, is rendered probable by the fact that the boundary between the conglomerates forming the principal range (usually referred to the *verrucano*), and the gneiss of Val Tellina to the N., as well as the trias of the Bergamasque valleys to the S., is parallel to that range and to the Val Tellina. The eastern

portion of the region, lying S. of the boundary above defined, is characterised by a vast mountain mass formed of a very peculiar, highly crystalline granite, containing much amphibolite, which rises into ridges exceeding 11,000 ft. in height.

There is at least as much reason for regarding the region here spoken of as forming one of the main divisions of the Alps, as can be urged for the separation of the Graian from the Pennine Alps, or those of Dauphiné from the Cottian chain. To ordinary tourists the whole forms a *terra incognita*; and scientific travellers, who are usually the first to explore new districts, have scarcely touched many of the most interesting valleys. The Editor's personal acquaintance with a considerable portion of this beautiful region is defective; and he has obtained so little information from other sources, that many of the routes here named are indicated rather than described. It may be hoped that the Italian Alpine Club will hereafter supply the required information, at least as to that portion of the territory that has been united to the Kingdom of Italy.

The limits of the region here defined under the name of *Lombard Alps* are accurately defined by the Lake of Como and its Lecco branch, to the W.; by the high-road from Colico to Cles through Val Tellina, and over the Aprica and Tonale Passes, to the N.; by the Val di Non, the valley of the Adige from San Michele to Trento, the road thence to Riva, and the Lake of Garda, to the E.; while the S. boundary is formed by the plain of Lombardy. The title, Lombard Alps, may be objected to on the ground that some of the valleys in the E. portion of the range belong to the Italian Tyrol; but the political divisions in this portion of the Alps are so capricious, that it is impossible to take them into account in an arrangement based upon the natural formations of the surface, especially as they do not here coincide with the boundaries anciently established between the contending races that have divided the occupation of the habitable parts of the Alpine chain.

SECTION 38.

BERGAMASQUE VALLEYS.

THE principal range of the Lombard Alps, running parallel to Val Tellina at no great distance from the Adda, sends down torrents that fall rapidly towards that river through short and steep valleys. On the S. side of that range, which is separated from the plain of Lombardy by an extensive mountain district where many of the secondary ridges affect a direction parallel with it, the minor streams are nearly all collected into the channel of three rivers—Brembo, Serio, and Oglio. The two first join the Adda before their united waters reach the Po, while the more copious stream of the Oglio is ultimately united to the Po a little S. of Mantua. The city of Bergamo stands at the extremity of one of the southern outlying promontories of the Alps, between the rivers Serio and Brembo; and the main valleys of those rivers and their tributaries, which have at all times followed the political fortunes of the city, are generally known as the Bergamasque Valleys. That name may conveniently be given to the district included in the present section, which comprehends, however, in addition to those valleys, the short but beautiful glens that lead to the E. shores of the Lake of Como, and the tributaries to the Adda drained by the torrents on the N. side of the principal ranges. The Editor has to acknowledge his own ignorance of a great portion of this district, and his ill success in obtaining useful information from other sources. The botanist who may desire to explore a region

extraordinarily rich in rare plants will find an excellent guide in a work by the late Dr. Rota, entitled 'Prospetto della Flora della Provincia di Bergamo,' which is a model for local works of the same class. It does not include the lateral valleys of Val Tellina, nor those that descend towards the Lake of Como; but the botanical reader will find in Rte. E some notes that may partially supply the deficiency.

Route A.

BERGAMO TO TIRANO, BY VAL SERIANA.

The way here indicated is probably one of the most interesting that can be followed in the Lombard valleys, but little information respecting it is at hand.

Bergamo (Inns: Italia, good; Fenice, tolerably good; both in the lower town) is an ancient city, divided into two distinct portions. The lower and more modern, originally a mere suburb, stands about 800 feet above the sea, on the margin of the great plain of Lombardy; while the upper town, still girt with its ancient ramparts, now converted into public walks, crowns a hill above 500 ft. above the plain, midway between the rivers Serio and Brembo. The higher hill of the Castello (now in ruins), about 1½ m. from the town, commands a remarkable view, which extends in fine weather to Monte Rosa, Monte Viso, and the chain of the Apennines. In the upper town are the Church of Santa Maria, with a remarkable chapel of the Colleoni family; the Duomo, not very interesting; the Palazzo Vecchio, or Broletto, and the unfinished Palazzo Nuovo; besides many fine houses belonging to the principal families of this part of Lombardy.

A good road leads from Bergamo through the lower half of *Val Seriana* as far as *Ponte di Nossa* (about 1,650′), a distance of about 18 miles. The first village in the valley is *Alzano Maggiore* (564′), where there is a good country Inn. About 12 m. from Bergamo, a short lateral valley opening to the E. is traversed by a paved track leading to *Gandino*, a large village, where the naturalist wishing to explore the lower mountains of this district finds good accommodation. N. of the village rises the *Pizzo Formico* (5,171′). Soon after passing Ponte di Nossa, the road leading to Clusone and the Lago d'Iseo (§ 39, Rte. C) leaves the Serio to traverse the low ridge on the E. side of the valley. In the opposite direction, the *Monte Albeno* (6,706′), and *Monte Arera* (8,255′) are the most conspicuous points in the range dividing the Serio from the Brembo. Between them is a pass leading to Val Brembana by Zambla. The principal track leading to the head of Val Seriana keeps nearly due N. along the rt. bank, passes *Gromo*, and at *Fiumenero* (1,972′) turns to the rt., until its direction is but little N. of E. At the last-named village, a torrent descends to the Serio from a recess in the principal range of the Lombard Alps between the *Monte Redorta* (9,980′) and *Pizzo del Diavolo* (9,574′). Immediately on the E. side of the latter peak, which must not be confounded with another summit of the same name lying farther E., is the *Passo del Salto*, leading to Sondrio by the SE. branch of Val Ambria (Rte. B).

The valley of the Serio is sometimes called *Val Bondione* above a village of that name, which is the highest passed on this Rte. The scenery here becomes quite alpine in character, as the track, mounting on the l. bank of the Serio, approaches a group of waterfalls said to be the finest in this part of the Alps. The principal fall, called *Cascata del Barbellino*, is over 200 ft. in height; and above it are two others, remarkable for the mass of water that breaks over the ledges of conglomerate rock. Above the falls is an upland glen called

Val Barbellino, where the Serio is formed by the union of many torrents from the surrounding peaks, most of which approach, though they do not quite attain to, the height of 10,000 ft. Near a small tarn called Lago Barbellino, the botanist may gather *Viola Comollia*. Several passes, all of them high and steep, lead across the range into Val Tellina. The most direct way to Sondrio is by a track mounting near the waterfall to a gap in the ridge between the *Pizzo di Cocca* (9,705′) and the eastern Pizzo del Diavolo. The way to Tirano lies farther E., and passes on the W. side of Monte Torena, traversing a small glacier, and descending through the *Val Caronella* to Tresenda, on the high road from Sondrio to Tirano, where the road to Edolo over the Apriea Pass leaves the Adda. See § 36, Rte. E.

Route B.

BERGAMO TO SONDRIO, BY VAL BREMBANA.

The valley of the Brembo does not offer any scenery so wild and striking as that of the head of Val Seriana; but many of its lateral branches lie between mountains that rise boldly to a height of about 8,000 ft., and would perhaps be preferred by a painter to the sterner recesses of the central ranges of the Alps. The tourist who will devote some days to the valley is certain to find many sites little if at all known to any but the natives.

The road leaves Bergamo by the NW. end of the lower town, passing on the N. side of the old city, and in about 5 m. reaches the banks of the Brembo. One road crosses the river to *Almenno* (863′), a village with a good Inn, lying on the l. bank, near the opening of *Val Imagna*. By that valley the pedestrian may reach Lecco, passing over the ridge of the *Monte Resegone* (6,165′), which rivals the Campione (Rte. E) for the number of rare plants that have been found on its craggy pinnacles. A local guide should be taken. The traveller bound for the head of Val Brembana should not cross the river at Almenno, but take the road to the rt., which, after passing Botta and Sedrina, traverses the Brembo higher up, about 1½ m. before reaching *Zogno* (1,158′). This is the best stopping-place in the lower part of Val Brembana. There is also a tolerable inn at *S. Pellegrino*, about 2½ m. higher up, near the foot of *Pizzo Regina* (4,885′). The scenery improves as the traveller ascends the valley, keeping to the rt. bank above Zogno. To the W. is the opening of *Val Talleggio*, by which the pedestrian may reach Introbbio in Val Sassina (Rte. E). On the N. side of that glen, the *Aralalta* (6,585′) rises very boldly, and though of such moderate height is a conspicuous object. The two main branches of the Brembo unite at Lenna (1,804′), which is but ½ m. from Piazza, the principal village of the upper part of the valley. Here the traveller bound for Sondrio leaves the road, about 23 m. from Bergamo, and follows the NE. branch, which preserves the name of Val Brembana. A path along the rt. bank passes opposite to *Trabucchello*, at the W. base of Monte Corte (8,340′), and soon after reaches *Branzi* (2,178′). This village would be the best stopping-place for a botanist, who will find very many objects of interest in the neighbourhood. Among other rare plants, *Alnus Brembana* is common on the slopes of schistose rock above the valley.

The traveller has a choice of several passes leading from Branzi to Sondrio. Probably the most interesting is that which is reached by following the Brembo to its head at a small lake called Lago del Diavolo (2,556′). A track leads from thence over a pass lying due N. into the SW. branch of *Val Ambria*, one of the chief of the southern valleys of Val Tellina. It is famous for the excellence of its butter,

which has been ascribed to the prevalence of *Sanguisorba dodecandra*, a plant peculiar to this and one or two neighbouring valleys. It is best to keep to the path along the l. bank, and descend to *Faedo*, whence Sondrio is easily reached by a bridge over the Adda due S. of the town.

Another way from Branzi, rather shorter than that by Val Ambria, is by a pass on the E. side of the *Corno Stella* (8,845′). This leads into the head of *Val del Livrio*, which opens into Val Tellina at *Cajolo*, about 1 hr. from Sondrio.

A third and more circuitous way is by a pass on the W. side of Corno Stella, leading to the head of *Val Cervo*. The lower part of that valley is a narrow gorge; and the path is carried at a great height above its rt. bank, till it finally descends to *Cedrasco*, near the junction of the torrent with the Adda.

All the above passes are reached from the main branch of Val Brembana, which mounts ENE. from Branzi. At that village a torrent joins the Brembo from NNW., issuing from a lateral valley connected with Val Tellina by two passes, one of which is certainly easier and probably more direct than that last noticed. The way lies by *Valleve* and *Foppolo*, the highest village on the S. side of the pass, and then mounts to the ridge east of *Monte Cadelle* (8,301′) overlooking the head of *Val Madre*. A well-marked path leads down that valley to *Fusine*, about 1 m. W. of Cedrasco, near a bridge over the Adda, by which the traveller attains the high road about 7 m. below Sondrio.

[At the head of the branch of the valley NW. of Valleve is *Cambrembo*, or Capo Brembo. A pass lying due N. of that village leads into the SE. branch of the Val di Tartano, which enters Val Tellina about 4 m. E. of Morbegno, and this would afford the most direct way from Branzi to that town. There is another pass from *Cambrembo*, keeping to the S. side of the principal range, but N. of *Monte Cavallo* (7,671′), by which the track of the Passo di San Marco (Rte. C) may be reached from Branzi.]

Route C.

BERGAMO TO MORBEGNO, BY THE PASSO DI SAN MARCO.

The way here indicated is by far the easiest and the most direct for a traveller wishing to reach Val Tellina from Bergamo. By starting early in a light char, or *calessina*, an active traveller might reach Morbegno on the same day. It was said in Rte. B, that at Lenna, very near Piazza, the Val Brembana meets an important lateral valley whose torrent descends from NNW. The char-road is carried up that valley to *Olmo* (1,877′), a small village standing near the point where the stream of the Stabina, descending from the W., unites with those issuing from two short nearly parallel glens that open N. of Olmo. The easier way to the pass is by the easternmost of these glens, passing the village of *Averara*. Keeping to the rt. at the head of the glen, a frequented bridle-track leads to the *Passo di San Marco* (5,997′), probably the lowest in the range dividing Val Brembana from Val Tellina. The pass lies SW. of the *Monte Azzarini* (7,976′), and leads down into Val d' Orta, one of the branches of *Val del Bitto*. Passing *Albaredo*, the traveller descends to Morbegno in about 4 hrs. from the pass.

Route D.

PIAZZA TO MORBEGNO, BY VAL STABINA—PIZZO DEI TRE SIGNORI.

The *Val Stabina*, which opens due W. near Olmo above Piazza (see last Rte.), offers to the mountaineer a much more interesting but longer way to Morbegno than that by the Passo di San Marco. The head of the valley leads to Introbbio in Val Sassina (Rte. E) by an undulating plateau, called Monte Bobio, about 5,000 ft. in height. Two or three lateral glens enter Val Stabina from the N. The westernmost of these is reached above a hamlet called Valtorta, and a rough track mounts through it, first by the E. side, then by the W. bank, and finally up a steep and bare slope above the l. bank of the torrent, which is nearly dry in the height of summer. This leads to a hollow in the mountain range, where a châlet, or *baita*, is inhabited for a short time during the fine season. Cattle-tracks, and paths connected with mines that have been worked at various times in this neighbourhood, tend to confuse the stranger; but as soon as he gains a sufficient height, he finds that all the ridges converge towards one bold summit, which owes the name *Pizzo dei Tre Signori* to the fact that it stands at the meeting of several valleys once belonging to three distinct territories, and now to three provinces of Lombardy. On the S. side it overlooks the glen here described, and another tributary of the Bergamasque Val Stabina; on the W. is the head of Val Biandina, a tributary of Val Sassina in the province of Como, while the N. side of the mountain is drained by one of the branches of Val del Bitto. The S. side of the peak is extremely steep, and time would be lost by attempting to scale it on that side. A far better course is to reach the SW. shoulder of the mountain, where a good track is carried along it, overlooking the head of Val Biandina, and a small lake—Lago di Sasso—lying at a great depth below the pass. The best way to the Pizzo dei Tre Signori is by a hollow to the rt. of the path, where snow lies through a great part of the summer. The ascent is rather steep, and a little step-cutting may be required, until the ridge is reached which extends northward from the peak, between the head of Val Biandina and a deep hollow, connected with the Val del Bitto, and dividing the Pizzo dei Tre Signori from the adjoining summit of the Pizzo di Trona. A small lake lies in the hollow, in which snow lay deep on the 19th July, when the writer passed this way, and the lake was completely frozen over. The summit of the Pizzo dei Tre Signori commands a very extensive and interesting panoramic view of the Bernina, the Monte della Disgrazia, and the peaks enclosing Val Masino, to the N., and of the Lepontine Alps and Monte Rosa to the NW. and W. In the opposite direction a portion of the Orteler group comes into view, but the Adamello range is in great part concealed by the Redorta and the adjoining high mountains at the head of Val Seriana. A small portion of the Lake of Como, between Argegno and Balbianello, comes into view. The summit is a few feet higher than the Legnone, or about 8,600 ft. in height. *Androsace Charpentieri*, *Artemisia spicata*, *Eritrichium nanum*, and other rare plants, are found on the highest ridge of the mountain. The coarse conglomerate forming the peak contains fragments of mica-schist, gneiss, and other crystalline rocks.

There appears to be no difficulty in descending into the snowy hollow above mentioned, which would lead the traveller down to the head of Val del Bitto; but it is a more agreeable way to follow for some distance the northern ridge of the mountain, where the botanist will be rewarded by many interesting plants. On descending to the lake which lies at the lower end of the hollow, the traveller may hit upon

a track connected with an abandoned mine. He leaves to the l. a faintly-marked path leading over the *Passo di Trona* to the head of Val Varrone (Rte. G). The *Val di Bitto* is an extremely picturesque glen, containing several scattered hamlets, and produces cheese of superior quality. The highest group of houses is called Gerola, and in 3 hrs. of rather rapid descent the traveller may reach *Morbegno* (§ 36, Rte. E).

Route E.

LECCO TO BELLANO, BY VAL SASSINA.

The beautiful valleys whose torrents flow into the Lake of Como by its E. shore are more easily visited from that lake than from Bergamo; but the mountains that enclose them belong to the outlying members of the range of the Lombard Alps, and they could not well be described elsewhere than in this place. The most considerable of these valleys is *Val Sassina*, a deep and broad depression which almost isolates the remarkable range of crystalline limestone lying E. of the Lake of Como. The upper portion of Val Sassina consists of a rather wide undulating plateau, about 1,500 ft. above the level of the Lake of Como, extending from near the village of Ballabio above Lecco to the N. of Introbbio. The streams that reach this plateau are united in the *Pioverna* torrent which flows NW. to Bellano. The descent from the plateau towards Lecco is very rapid. There is now a good road on that side, which is open to Introbbio, and about 2 m. farther; but the old road down the valley towards Bellano is scarcely passable for wheeled vehicles, and in its present condition can be used only on foot or on horseback. The way from Lecco to Bellano affords a very pleasant excursion for persons who fix their head-quarters on the lake, but the path described in the next Rte. affords a still more agreeable way to Introbbio. The mountains on the E. side of Val Sassina contain some valuable mines, the most important of which is noticed below, and the geologist and mineralogist will find abundant occupation in the valley. It would be difficult to name any station in the Alps where the botanist can collect a richer harvest of rare plants, and a few days may well be devoted by him to making excursions from Introbbio, where there is now a comfortable Inn. The Campione, which produces the rarest and most beautiful of the plants noticed below, may be visited in one long day from Lecco, and the Grigna may be reached from Varenna or Mandello; but Introbbio is to be preferred as a centre. The following short list includes only the species which are likely to be of especial interest to the botanist already familiar with the Swiss Flora. To those which are confined to particular spots the names of the mountain on which they have been found, and, in some cases, the approximate height, is affixed within brackets. The Resegone has been included as a station for some species, though it forms a separate excursion from Lecco:—

Aquilegia Bertolonii.
Papaver pyrenaicum (Grigna, 7,800′).
Arabis pumila (Campione, Resegone).
Barbarea bracteosa (Monte Bobio, Resegone).
Viola heterophylla (Campione, Resegone).
Silene Elizabethæ (Campione, 6,000′).
Mœhringia Thomasiana (Campione, Grigna).
Cytisus glabrescens.
——— *purpureus.*
——— *radiatus.*
Saxifraga Vandellii (Campione, Resegone).
——— *sedoides* (Campione, Grigna).
——— *mutata* (Campione, Resegone).
Laserpitium peucedanoides.
——— *nitidum* (Campione, Resegone).
Scabiosa graminifolia.
Telekia speciosissima.
Achillea Clavennæ.
Senecio cordatus.
Crepis Jacquini (Campione).
Hieracium porrifolium.
Phyteuma comosum.
Campanula spicata.
——— *Raineri* (4,000′ to 7,000′).
——— *elatinoides* (Monte Bobio, Resegone).
Betonica Alopecurus.
Primula glaucescens (5,000′).
Euphorbia variabilis (3,000 to 4,500′).
Allium pedemontanum (Campione).
Carex baldensis.
Glyceria spectabilis (Monte Bobio).

The road to Val Sassina mounts through a busy suburb of Lecco, where a slender stream is employed to work silk spinning-wheels and other machinery. After escaping from the houses, the road crosses the stream, and the ascent is steep and almost continuous for rather more than 1 hr., when the lower of the two hamlets, called *Ballabio*, is reached. The ascent of the Campione may be commenced here, but not without a local guide, as a stranger starting from this side is almost certain to be involved in difficulties. It is better to follow the road about two miles farther. A short way beyond Ballabio the summit level is reached, and the road is carried over the plateau forming the head of Val Sassina, and lying between the limestone range of the Grigna on the l., and the lower range, chiefly formed of conglomerate, on the rt. side. The Grigna range includes two principal summits. The highest is the mountain generally known by that name, but also called Monte Codeno, or Grigna Septentrionale, to distinguish it from the southern summit, or Grigna Meridionale, properly called Campione. The *Grigna* attains 7,908 ft. —the *Campione* 7,158 ft. Both these peaks show towards the Lake of Como a very bold front, with towers and precipitous walls of rock rising in tiers. The Campione, which appears inaccessible from every other side, is easily reached from the head of Val Sassina, by a long, but not very steep slope. It is best to keep a direction somewhat N. of the highest peak, and then turn to the l. till the summit is attained. This is formed of successive teeth of rock, divided by deep gaps. A little scrambling is necessary to reach the point where a stone man has been erected, and then the traveller is divided by a cleft from the last and highest pinnacle of rock, which has not been attained, but may probably be achieved by a skilful cragsman. The ascent of the Grigna from the head of Val Sassina involves a long and monotonous climb up a steep unbroken slope, till the ridge is reached a short way from the highest point. To the naturalist as well as the ordinary traveller, the ascent from the opposite side (Rte. F) is much more interesting.

In $2\frac{1}{4}$ hrs. in a carriage, 3 hrs. on foot from Lecco, the traveller may reach Introbbio (Inn: Alb. delle Miniere, new, clean, and reasonable), a thriving village, which the traveller may make a centre for many excursions. Besides the ascent of the Campione, above noticed, the geologist or botanist may visit the mine of *Valbona*, situated a short way below the summit of the Cima di Cam, at fully 6,500 ft. above the sea. The resident director of this and other mines worked in the neighbourhood is Signor Arrigoni, Syndic of Introbbio. A naturalist wishing to explore the high valleys that converge towards the Pizzo dei Tre Signori, and to ascend the peak, should apply to that gentleman for permission to pass the night at a house close to the principal mine, which contains two good beds, sometimes required for the use of directors or managers. The pass to Val Brembana over the ridge of *Monte Bobio* is not very interesting in point of scenery, but the botanist will find several curious plants on the rocks rt. of the regular track. The way to the head of Val Varrone is noticed in Rte. G.

The new road is carried about 2 m. beyond Introbbio; but after that point the old road, never good, has become almost impassable, having been partly carried away by inundations of the Pioverna. The stream is crossed near Cortabbio, and soon after passes San Pietro and Cortenova. A little farther is *Tartavalle*, where a mineral spring attracts a few water-drinkers. To this point the slope of the valley has been very gentle, but a little below Tartavalle the Pioverna begins to fall rapidly through a defile which it has cut through the triassic rocks. The scenery is extremely picturesque. By bearing to the l. the traveller may go

to Regoledo (§ 33, Rte. B) without descending to Bellano. By the track which keeps to high ground on either bank of the Pioverna, he will reach Bellano (Inn: Alb. della Torre), described in § 33, Rte. B.

Route F.

VARENNA TO INTROBBIO—ASCENT OF THE GRIGNA.

The little glen of Esino, by which the traveller may reach Val Sassina from Varenna, and which affords the easiest way for ascending the Grigna, is one of the most charming of those retired nooks which abound in the mountains about the L. of Como, and well rewards those who make it the object of a short excursion from Varenna (see § 33, Rte. B). The only drawback is the intense heat to which the traveller is exposed who ascends from Varenna after the sun has begun to tell upon the slopes above that village. The ascent of the Grigna from that place is an excursion long enough to make it expedient to start at a very early hour; but even without that motive it is advisable to start betimes.

The track mounts from Varenna on the N. side of the rock on which stand the ruins of the castle, and then keeps on the ridge above the l. bank of the torrent, commanding at intervals beautiful views over the lake. On the opposite side of the glen is *Perledo*, interesting to geologists for the remarkable fossils of the triassic period found in adjoining quarries. After a moderate ascent, the track is carried at a level along the SW. slope of the valley, gradually approaching the stream, which is crossed a short way below the poor village of *Esino*. In pursuance of a local regulation, the curate or *cappellano* of the village is bound to keep two beds for the accommodation of strangers; and this is convenient for a naturalist who desires to have sufficient time for the exploration of the Grigna. There is here a track leading SSW. over one of the spurs of the Grigna to the shore of the lake N. of Olcio. Above Esino the track to Val Sassina returns to the l. bank, and mounts through a delightful glen presenting the perfection of park scenery, where the traveller may find his way over soft turf under the shade of noble chestnut trees. The higher summits of the Grigna are not in view, or else the scene might rival the choicest spots of the Italian Tyrol. Near the head of this recess there is a path to the rt. leading to the head of the Neria torrent, which flows SSW. to the Lake of Como by Mandello, and another, faintly marked, which is followed in the ascent of the Grigna. The main track to Val Sassina keeps an easterly direction, passing near to a châlet at the head of the glen, where milk may be obtained. A short ascent leads thence to the summit of the ridge forming the *Cainallo Pass* (about 4,000′?). The scenery on the Val Sassina side is bolder, though not more beautiful than that passed in the ascent. Some of the shattered pinnacles of the Grigna rise to the rt., while the path winds for some way amidst steep rocks, and then descends by zigzags the steep slope towards the valley. The beaten path leads to Cortenova; but the mountaineer who has no objection to rough ground may shorten the way to Introbbio by making his descent to San Pietro. Fully 2½ hrs. are required to reach that place from Varenna, and nearly 1½ hr. will be employed on the way thence to Introbbio (see last Rte.).

The easiest and at the same time the most interesting way for the ascent of the *Grigna* (7,908′) follows the course above described nearly as far as the head of the glen of Esino. Mounting nearly due S., amid stunted brushwood, the traveller soon reaches a ridge which commands a view of a considerable hollow, or recess, running deeply into the mass of the Grigna. He will find a narrow but easy path

that ascends very gently round the W. side of this hollow, ultimately reaching its S. end, which lies at no great distance below the highest ridge of the mountain. A rather steep ascent leads past a miserable hovel which serves as lodging for one or two shepherds, who pasture a few sheep and goats on the nearly bare rocks. Continuing to ascend, the traveller reaches a hollow in the mountain containing a large accumulation of snow, which never completely melts even in the hottest summer. It is spoken of by some local writers as a glacier; but the snow is in the condition of névé, rather than that of true glacier-ice. Near this the botanist may gather *Papaver pyrenaicum*. The mountaineer will have no difficulty in making his way to the highest ridge of the mountain, and to the highest point which lies near the S. end of the ridge. The panorama is very extensive, and includes a great part of the valley of the Po, bounded by the Apennines of Parma and Modena; but the Lake of Como does not unfold itself so fully as might be expected. The projecting spurs and lower terraces of the mountain conceal a great part of it from view.

It appears to be possible to descend from the ridge close to the summit towards Mandello through one of the branches of Val Neria; but the way is certainly very steep, and may be impracticable. A much easier way is to return a part of the way taken in the ascent, and then descend to Mandello by the head of one of the main branches of the Neria.

Route G.

MORBEGNO TO BELLANO, BY VAL VARRONE.

In the description of the E. shore of the Lake of Como (§ 33, Rte. B) allusion was made to the *Varrone*, a considerable torrent that enters the lake close to Dervio. It drains a valley parallel to Val Sassina, but far less frequented. It is strange that nearly all the communication between the middle and upper part of this valley and the Lake of Como should be through Bellano, over the ridge separating the two neighbouring valleys, rather than by the natural line of descent to Dervio. The ground is so difficult, and the path so rough and hilly, that the time requisite for descending to Dervio is considerably more than that sufficing to reach Bellano; and it is said that in one part of the valley the frequent fall of stones from the flanks of the Legnone makes the path somewhat dangerous. The traveller approaching the L. of Como from Morbegno may take an unfrequented but interesting way through Val Varrone, and by giving a second day to the excursion will have time to make the ascent of the Legnone. There is a path from Pedesina in Val del Bitto by which one branch of Val Varrone is reached directly over a pass lying a little S. of W. from that hamlet. Those who wish to see something of the fine scenery at the head of Val del Bitto will prefer the *Passo di Trona*, leading to the head of the main branch of Val Varrone. This is not very attractive in point of scenery; but several rare plants, such as *Cardamine asarifolia*, *Androsace argentea*, and, lower down in the valley, *Barbarea bracteosa*, reward the botanist for his visit. After descending into the head of the valley, a level tract of alpine pasture extends for more than a mile; and soon after this terminates, the traveller unexpectedly finds a good road in an uninhabited and seemingly deserted valley. It has been made with

a view to mining operations which are at present carried forward lower down. The scenery becomes more interesting as the road descends two successive steps, passing from the l. to the rt. bank, and a portion of the ridge of the Legnone begins to show itself above the nearer slopes. Should the traveller wish to go directly to Bellano, he must follow the road which returns to the l. bank, and about 2 m. lower down begins to ascend towards a depression in the ridge dividing the Varrone from the Pioverna. Towards the summit of the ridge he gains a fine view of the Legnone, and then follows the road across a nearly level plateau whereon stand three or four villages, the chief of which is *Margno*. He then crosses to the rt. bank of an affluent of the Pioverna, and ascends gently for some distance till he finds himself in Val Sassina, on a well-made track, at a great height above the course of the Pioverna, commanding beautiful views. At last a steep and long descent by a rough paved track leads down to Bellano.

If the traveller descending Val Varrone from the Passo di Trona should intend to halt at Premana, probably the best quarters in the valley, he must be careful not to follow the road at the point where it returns to the l. bank of the Varrone. About 5 min. above the bridge, where the road begins to descend rapidly, a faintly-marked path turns to the rt., and is carried for some distance along the steep slope of the mountain, gradually ascending, and attaining a great height above the torrent, till it reaches the village (Rte. H).

Route H.

INTROBBIO TO COLICO—ASCENT OF THE MONTE LEGNONE.

The traveller who has undertaken to explore the valleys on the E. side of the Lake of Como will not be content to omit the ascent of the highest of the adjacent peaks, whose bold pyramidal form is so remarkable from most parts of the lake. This is the well-known *Monte Legnone* (8,568′), lying in the range dividing Val Varrone from Val Tellina, and forming the western termination of the principal range of the Lombard Alps. Under favourable conditions the view is of the highest interest, and the expedition may be strongly recommended to the mountaineer who can spare two or three days when in this neighbourhood. It is not, indeed, impossible to make the ascent from Colico and return on the same day to that place; but it is a much better arrangement to ascend the mountain from the side of Val Varrone. The ascent may be combined with an excursion in Val Sassina and the neighbouring valleys by one or other of the courses here suggested.

The easiest way from Introbbio to Val Varrone is to follow a track on the rt. bank of the Pioverna from Cortabbio to Bindo, and then ascend gently to Margno. The way then lies by the road mentioned in Rte. G., which, after passing Sommadino, begins to descend towards the Varrone. On the opposite side, and at a great height above that torrent, are seen two villages. That lying immediately opposite, and at the base of a ridge that extends to the peak of the Legnone, is *Pagnona*. To the rt., and separated from Pagnona by a deep ravine that penetrates far into the range of the Legnone, is *Premana*, where rather rough but very tolerable quarters are found at a village inn kept by Malugani. To reach the one or the other of these villages, it is necessary to cross the Varrone, and make a long and steep ascent. Pagnona offers the more direct way to the summit; but the course by Premana, noticed below, is perhaps the more interesting.

A second way from Introbbio is by a track running nearly due N. through the *Val Biandina*, which keeps the same direction when the head of that

valley turns towards the Pizzo dei Tre Signori, and leads over the ridge dividing it from Val Varrone, which is reached nearly 2 hrs. above Premana.

A third route from Introbbio, more interesting to the mountaineer than the above, is to take the Pizzo dei Tre Signori in the way to Premana. For that purpose, it is best to go by the mine of Valbona, and then to reach the W. base of the peak, mainly by following the ridge overlooking the head of Val Biandina. The way would then lie by the lake at the upper end of Val del Bitto and the Passo di Trona. (See Rtes. D and G.) This would be a hard day's work if taken from Introbbio, but a moderate day from Valbona, if the traveller should be able to sleep there.

The ascent of the Legnone from Pagnona is along the southern ridge of the mountain, and is probably the easiest way of reaching the summit. The course from Premana is along the E. side of the wild glen or ravine that separates that village from Pagnona. Towards the head of this glen the traveller reaches a group of châlets, and continuing the ascent with scarcely a trace of path, attains to a little tarn surrounded by dark rocks, which often remains frozen till late in the summer. Keeping well to the l. round a projecting buttress in the mountain, a rough and slightly-marked track leads to a pass or gap overlooking Val Tellina. This pass, called *L'Usciolo* (?), is reached in 3½ hrs. from Premana, and the traveller may descend from it in 3 hrs. to *Delebio*, half-way between Morbegno and Colico (§ 36, Rte. E).

The way to the summit of the Legnone is along the ridge to the l. of the pass. This is steep, a good deal broken, and in places requires some care. The writer encountered bad weather, and did not complete the ascent, but has no doubt that the views gained from the time that a traveller reaches the ridge must be extremely fine. It would be possible to descend from the summit direct to Colico, and it would also be easy to reach Morbegno from the Usciolo Pass, following the Lesina torrent down to the high road at Delebio.

SECTION 39.

VAL CAMONICA DISTRICT.

THERE is no one of the greater valleys of the Alps that has been so unaccountably neglected by foreigners as the Val Camonica. Allowing the pre-eminent attractions of the three great Lombard lakes, it is remarkable that strangers entering Italy from the Tyrol are not oftener tempted to select a route which will lead them through scenery grander than that of many of the more famous alpine passes, and after the usual gradual transition to southern climate and vegetation, enters the plain of Northern Italy after traversing a lake which ranks next after those that draw visitors from every part of Europe. The lateral valleys of Val Camonica abound in scenery of the wildest character, but are as yet scarcely known even to men of science.

In the present district are included the main valley and the mountain district lying between it and the Serio. The high mass of snowy mountains whose best known summit is the Adamello, lying E. of the head of Val Camonica, is described in the next section; but the Val Trompia, N. of Brescia, and the ranges between Val Sabbia and the Oglio, are more conveniently comprised in the present division of this work.

The natural division between the Adamello group and the ranges enclosing the Brescian valleys nearly correspond with the track from Breno to Bagolino by the pass of Croce Domini.

There are fair country Inns at Lovere, and at Breno, in Val Camonica,

and at Gardone and Bovegno in Val Trompia; but tolerable accommodation for a mountaineer may be found at many other places lying higher, and better situated for exploring the alpine valleys of this district.

Route A.

MALÈ IN VAL DI SOLE TO BRESCIA, BY THE TONALE PASS AND VAL CAMONICA.

	Italian miles	Eng. miles
Pelizzano	8	9
Ponte di Legno	12	14
Edolo	12	14
Breno	16	18½
Pisogne	14	16½
Iseo	12	14
Brescia	13	15
	87	100¾

A road in great part new, but rough in places, leads from the Tyrol to Brescia, so that travellers reaching Val di Non by the road from San Michele (§ 37, Rte. B), or by any of the mountain passes described in the same section, may enter Italy by this route without the slightest difficulty or fatigue. Travellers who would combine this part of the Alps with the Bernina range, or the fine scenery at the head of Val Tellina, without crossing the Austrian frontier, may reach Ponte di Legno from Sta. Catarina by the Gavia Pass, or follow the carriage-road over the Aprica Pass from Tresenda in Val Tellina to Edolo.

As far as Fusine, a hamlet about 1 m. above Pelizzano, the way from Malè to the Tonale Pass is the same as that leading to Bormio (§ 37, Rte. B). At that place the new road of the Tonale follows the branch of Val di Sole, called *Val Vermiglio*, in a nearly direct line WSW. to the Tonale Pass. Val Vermiglio forms a deep trench at the N. base of the granitic range of the Presanella (§ 40), whose W. extremity is formed by the Monte Piscanno. Three hamlets are passed, of which the highest, properly called *Pizzano* (4,192′), but often styled Vermiglio, has a decent inn, and the frontier custom-house. Beyond this the road mounts the slopes on the N. side of the valley, and after passing under a new Austrian fort, attains the summit of the *Tonale Pass* (6,483′). Opposite the fort the *Val Presena* opens to SE. an admirable view of the Presanella, whose highest peak was first reached from this side in 1864 (see § 40, Rte. A). A chapel and a poor inn stand very near the top of the pass, but the hospice has been left quite on one side in making the new road. The slopes and rocks of Monte Tonale, N. of the pass, produce many rare plants, of which the following deserve to be specially noted:—*Ranunculus Seguieri*, *Oxytropis Halleri* and *O. Gaudini*, *Potentilla camonia* (of Rota), *Saxifraga planifolia* and *S. stenopetala*, *Pedicularis asplenifolia*; *Primula integrifolia*, *P. glutinosa*. and *P minima*; *Orchis Spitzelii*; *Carex pulicaris*, *C. pauciflora*, *C. microglochin*, *C. bicolor*, *C. aterrima*, and *C. fuliginosa*, *Avena subspicata*, and *Poa sudetica*.

The new military road comes to an end at the summit of the pass, and the descent on the Italian side is by the old narrow and steep road, fit only for light vehicles. The head of Val Camonica is reached at *Ponte di Legno* (4,234′?), with a poor, dirty, and dear inn. The position is tempting to the mountaineer, as several alpine paths meet here. The Gavia Pass, leading to Sta. Catarina, is noticed in Rte. F, and the passes to Val di Genova, in § 40, Rte. B. It is most probable that the Monte Adamello (§ 40) is accessible by the Val delle Susine, which opens to the S. from Ponte di Legno, and by the Vedretta di Narcane at its head. The attempt is worth a trial. About 1 hr. below Ponte di Legno, near Pontagna, the *Val di Avio* opens to the S., leading to a rather large alpine lake lying E. of the peak of Mte. Avio. It would probably be practicable to cross the ridge S. of the lake, and descend by

the SE. side of the *Corno della Granate* (10,298′) into Val di Malga, a glen that enters Val Camonica at Rino, about 3 m. below Edolo. The high road descends rather rapidly along the Oglio from Pontagna to *Vezza*, where a track leads N. through Val Grande, gains the ridge NNE. of the *Monte Serrotini* (9,616), and some other summits of nearly equal height, and then descends westward to Mondadizza, below the defile of Morignone (§ 36, Rte. E). About 3 m. lower down the *Oglio*, another path leads to *Grosio*, in Val Tellina, by the easier pass of Mortirolo.

Edolo (Inns: Leone, tolerable; Due Mori, bad and dear), is the chief place in the Upper Val Camonica, 2,293 ft. above the sea. For the Aprica road to Tirano, see Rte. E. A post-carriage plies daily to Brescia. A little above Edolo, the Oglio bends to the S. and traverses a cleft, or *cluse*, through the axis of the Lombard Alps, thenceforward following a SSW. course, parallel to that of the Serio, the Chiese, the Lake of Garda, and the Adige. About 1 hr. below Edolo is the opening of *Val di Malga*, a glen running up to the very base of the Adamello, see § 40, Rte. B. Nearly 2 hrs. farther is *Cedegolo* (with a good country inn kept by Perroletto), at the opening of *Val Saviore*, which unites the streams from two glens that run deep into the Adamello range. The westernmost is *Val di Brate*, closed at its head by the *Vedretta di Salarno*, while farther E. is the *Val di Adame* leading to the *Vedretta di Adame*. It is easy to cross the ridge dividing the latter glen from the head of Val di Fum, but the way to Val Daone is by a track that mounts to SE. from the hamlet of Isola, and passes the Lago d' Arno. See § 40, Rte. C. At Cedegolo the high road crosses the Oglio, leaving on the opposite side *Grevo*, but it returns to the l. bank at

Capo di Ponte (1,345′), where there is a poor Inn. Here a mule-track turns eastward, and leads over a low ridge to Schilpario in Val di Scalve (Rte. D).

Breno is the principal place in the lower part of Val Camonica, picturesquely placed on a rock in the middle of the valley. It has an Inn (Pellegrino) offering fair accommodation, but the position is low and hot. Several glens, the longest of which is *Val Pallobia*, enter the valley from the E., and give access to the range of bold granitic peaks extending S. from the Monte del Castello. The nearest to Breno are the *Monte Blumone* (9,321′) and *Monte Frerone* (8,676′). A track that passes by *Pescarzo* is the shortest way to the Croce Domini Pass (Rte. G). Below Breno the road to Iseo and Breseia keeps to the rt. bank of the Oglio, till, at the junction of the torrent from Val di Scalve with that river, it leaves the road of the rt. bank which extends to Lovere, and traverses the alluvial flat on the l. bank to Pisogne near the influx of the Oglio into the *Lake of Iseo*. Without attempting to place this lake on a level with the three great Lombard lakes, nor even with that of Lugano, it may fairly be said that its attractions have not had a fair share of notice from travellers. The length, allowing for its somewhat sinuous form, is about 17 m.; and its breadth approaches 2 m., except at the middle, where it widens out, and the space is occupied by a large rocky island. Though the mountains rise in gentle slopes above the shores, some of them attain a considerable height, and the *Monte Guglielmo*, SE. of Pisogne, reaches 6,274 ft. The surface of the lake is 627 ft. above the sea, and its depth about 700 ft. A frequented road leading to Iseo and Brescia runs along the E. shore, where there are many villages and hamlets; the opposite side is comparatively deserted, though it offers many fine sites, and two or three proprietors possess villas on that bank. The chief communication on the lake is by steamer. In 1862 the steamer left Lovere about 4 A.M., reached Iseo about 5, and then went in about $\frac{3}{4}$ hr. to Sarnico. In returning, it started from Sarnico at

10 A.M., called at Iseo at 10.45, and then went to Lovere.

The writer, in place of a 'tidy Inn by the water-side,' spoken of in a work of authority, found the Vapore at *Iseo* to be miserable and filthy, about the worst he has ever encountered in the North of Italy. The position of Iseo is interesting to the geologist. The remains of the ancient moraines of the Oglio are very extensive. This neighbourhood has been well examined by M. G. de Mortillet, whose views as to the origin of Alpine lakes are referred to in the Introduction (art. Geology). The olive grows freely on the slopes surrounding the lakes, and in some sheltered spots orange and lemon trees ripen their fruit. *Campanula sibirica*, and other interesting plants, may be found on a rocky knoll crowned by a ruined castle a little E. of the village of Iseo. Besides the diligence for Edolo, omnibuses ply twice a day between Iseo and Brescia. The road runs through a fertile country, with pleasing views of the wooded mountains that form the southern extremity of the range dividing the valley of the Oglio from Val Trompia, to

Brescia (Inns: Albergo d'Italia; Regina d'Inghilterra; Gambaro; besides many second-rate houses), a fine city that has twice expiated by frightful suffering the patriotic spirit of its inhabitants. Its capture by the French in the 16th century was signalised by atrocities that even in that age surpassed the license of military violence; and in our own day it has supported from the Austrians a bombardment that caused needless devastation, whose traces are not yet effaced. The Museo Patrio, containing a famous bronze winged statue of Victory, with many other Roman antiquities, occupies the interior of a very interesting building originally surrounded by Corinthian columns, erected or restored by Vespasian. The ancient cathedral, or Duomo Vecchio; the Duomo Nuovo, conspicuous for its large cupola, and many other churches, some of them of high antiquity, deserve the traveller's notice. The civic buildings of Brescia, including the Palazzo della Loggia, the Broletto, the Torre delle Pallata, &c., and the palaces of the old families of the city, are on a scale which is not to be seen in towns of much greater importance north of the Alps. The ramparts, now converted into a public drive, command fine views of the surrounding country. The Campo Santo, near the town, contains many fine monuments, and deserves a visit.

Route B.

BERGAMO TO BRENO IN VAL CAMONICA, BY LOVERE.

The traveller approaching Val Camonica from the W. may choose between several routes from Bergamo.

The shortest way is to take the railway to *Palazzolo*, a large village on the Oglio, about 6 m. from the S. end of the Lake of Iseo. He may there hire a light carriage, or take the omnibus (twice daily?) to *Sarnico*, a village on the rt. bank of the Oglio, just at the point where it issues from the Lake of Iseo. It has an indifferent Inn. The traveller may then proceed to Iseo (last Rte.), or to Lovere (see below), by the steamer. Pleasant walks may be made from Sarnico over the hills above the lake, and the pedestrian may take that course to Lovere, ascending on his way the *Monte Bronzone* (4,446′), commanding a fine view over the lake, and then pass by Fonteno and Esmate. Another way is by a wooded valley, called *Val Caleppio*, lying on the W. side of Monte Bronzone, and about due N. of Sarnico. There is a track that way to Lovere which passes Adrara and Fonteno.

Another way from Bergamo to the lake is by the Baths of *Trescorre* (about 10 m. from that town), now much frequented for its mineral waters, but not attractive to the traveller. This place

lies at the opening of *Val Cavallina*, a deep excavation in the hills, occupied at its upper end by a long narrow sheet of water, called *Lago di Spinone*, drained by the Cherio torrent. A good road is carried along the rt. bank of that stream, and after passing the Lake of Spinone, traverses a level tract but a few feet higher than its banks, and descends very slightly towards the Lake of Iseo. After joining the road from Clusone, the shore is reached about 15 m. from Trescorre, and in 1 m. more the traveller arrives at *Lovere*, a village with a fair country Inn (Canone d'Oro), offering the best quarters and the prettiest position on the lake. Among other short excursions in the neighbourhood, the stranger may visit a curious gorge, called Orrido di Tinazzo, near the road from Trescorre.

Having reached Lovere, either by Sarnico or by Val Cavallina, there is a good road along the rt. bank of the Oglio. By that way the main road from Brescia to Breno and Edolo is joined about 8 m. from Lovere.

Route C.

BERGAMO TO BRENO, BY CLUSONE.

A somewhat circuitous route, especially interesting to the botanist who can spare time for a visit to Castione, enables the traveller to see something of the lower part of Val Seriana on his way from Bergamo to Val Camonica. The carriage-road up Val Seriana is carried as far as Ponte di Nossa (§ 38, Rte. A), and then turns aside to NE., in order to mount a low ridge forming a depression in the range on the E. side of Val Seriana. Here stands the large village of *Clusone* (2,129′), with a good country inn. About 2 m. E. of Clusone the *Borlezza* torrent, which had flowed for several miles towards WSW., makes a sharp turn to the S., and finally runs SE. to enter the L. of Iseo a little way S. of Lovere. There is a good road along the stream leading from Clusone to Lovere, by which place (see last Rte.) the traveller may reach Breno.

The other way from Clusone to Breno is by the upper valley of the Borlezza. A char-road leads to *Castione* (2.740′), about 6 m. from Clusone. This village stands at the S. base of the *Monte Presolana* (8,202′), formed of crystalline limestone, and very interesting to the botanist for the numerous rare plants that are found on its rocks, including most of those found on the limestone mountains of Val Sassina (§ 38, Rte. E). The rare *Campanula elatinoides* descends to the neighbourhood of Castione and Clusone, where it is seen on old walls, and has been gathered, though very rarely, near the shores of the Lake of Iseo. The pedestrian may go from Castione to Val Camonica across the ridge SE. of the Presolana overlooking the Val di Scalve (Rte. D). The height of the pass is not more than 4,265 ft. The beaten track leads from the pass up the last-named valley to Schilpario, but it is doubtless possible, with the help of a local guide, to descend the E. side of Val di Scalve to its junction with Val Camonica.

Route D.

LOVERE TO EDOLO, BY VAL DI SCALVE.

Reference has been made in Rtes. A and C to the *Val di Scalve*, one of the chief lateral valleys of Val Camonica. As in all the valleys that penetrate deeply into the range of the Lombard Alps, the torrent at the head of the valley flows parallel to that range from E. to W. At the hamlet of Vilminore it turns to the S., and ultimately flows SE. into Val Camonica. As mentioned in the last Rte., the Val di Scalve may be entered from Castione by a pass SE. of the Presolana; but the ordinary way is by a bridle-track that turns aside from the high road about 8 m. from

Lovere, and mounts the slope above the l. bank. Fully 4 hrs. are required for the gradual ascent by a path winding along the mountain declivity to reach the point where the valley turns to the E. along the base of the range whose highest summits are *Monte Gleno* and *Monte Venerocolo*. Through a lateral glen that joins the valley close to Vilminore, a rough track mounts to a pass on the E. side of Monte Gleno, and then descends through the *Val di Belviso*, entering Val Tellina at the point where the road of the Aprica descends to Tresenda.

The chief village of the upper part of Val di Scalve is *Schilpario*, where a naturalist may probably find tolerable accommodation. The line of junction between the Verrucano and the Trias appears to run along the head of the valley, and the Venerocolo produces many of the rare plants that prefer a siliceous soil.

The bridle-track from Schilpario to the upper part of Val Camonica is carried about 10 m. nearly due E. to Capo di Ponte, on the high road, about 5½ m. N. of Breno, or 13 m. from Edolo. A shorter way for a pedestrian to the latter place bears to the l. from the bridle-track, mounts a rather steep ridge, and descends into Val Paisco, which enters Val Camonica about 8 m. below Edolo.

Route E.

EDOLO TO SONDRIO, BY THE APRICA PASS.

About 17 m. to Tresenda—12 from thence to Sondrio.

The excellent new road over the Aprica Pass is very convenient for travellers who would combine a visit to Val Camonica with a tour in the Bernina Alps. The ascent from Edolo through the Val di Corteno, a lateral valley opening due E. of that place, is gradual, and nowhere very steep; and in about 10 m. the traveller reaches the summit of the *Aprica Pass* (4,052′). There is a very rough inn at the poor hamlet of Aprica, near the summit. The descent into Vall Tellina is much more abrupt than the ascent on the opposite side, and the difference of level much greater. Near the point where the declivity becomes steep there is a very fine view reaching at least 30 m. along the course of the Adda, from a place called Belvedere, where there is a neat little country inn. The descent is effected by one long zigzag, and in one place a short tunnel is made to permit the passage of the new road. The road from Tresenda to Sondrio is described in § 36, Rte. E.

Route F.

PONTE DI LEGNO TO SANTA CATARINA, BY THE GAVIA PASS.

The Route last noticed is convenient for those who are unable to achieve a moderate day's walk; but the present is in every way preferable for the mountaineer, connecting, as it does, two districts that offer many objects of attraction, by a wild and striking pass. In mounting from Ponte di Legno, which is about 1,500 ft. lower than Sta. Catarina, 7 hrs., exclusive of halts, should be allowed; but when travelling in the opposite direction, a steady walker may accomplish the distance in about 6 hrs.

A rough char-road is carried along the W. side of the valley, keeping at some height above the rt. bank of the Oglio till it approaches the village of *Pezzo*, which stands on rising ground above the opposite bank. NE. of the village a short glen leads to a low and easy pass—*Passo di Montozzo*—lying between the Monte Tonale and the Monte Tozzo, over which runs a path that leads from Pezzo to Pejo in Val di Sole in less than 4 hrs. Local tradition asserts that the now nearly bare slopes on either side of the Oglio were once covered with dense forests, which were destroyed by fire during some of the

wars that at many successive periods have been waged on this frontier of Lombardy The head of the valley of the Oglio from hence to the Gavia Pass is called *Val Mazza.*

The traveller bound for the Gavia Pass should leave Pezzo on his rt. hand, and follow the track that keeps close to the l. bank of the Oglio, till he meets the cart-road from that village at a chalybeate spring just below the nearly filled-up *Lake of Silissi.* At its N. end the appearance of the ground and the large blocks scattered over the valley, give colour to the tradition that 2,000 sheep and several shepherds were here overwhelmed by a berg-fall. Here the cart-road comes to an end, and a rough, but frequented track begins to wind up the mountain side. Nearly half-way in the ascent is a *maso,* or *baita,* where fresh milk is generally obtainable. The Val Mazza opens out at its head, and the chief sources of the Oglio are the streams that are seen to descend from small glaciers on the flanks of the mountains lying W. of the valley. The highest of these is called on the Austrian map 'Monte Gavia,' and its height is stated on the authority of 'Austrian Engineers' to be 11,752 ft The name does not appear to be known, at least on this side of the mountain; and the height, as the writer has assured himself by levelling, is little, if at all, over 11,000 ft. Bearing a little to the l. from the track, the traveller gains a good view of the Lago Scuro, a dark tarn more than 7,000 ft. above the sea, whence issues a rivulet which is often deemed to be the source of the Oglio.

The track keeps well to the rt., very stony towards the top, but not easily missed unless covered with snow. The passage is not at the centre of the broad trough that divides the high range of the Tresero to the rt., from the somewhat lower mountains to the W., but lies over some flat ledges of rock, 100 ft. above the lowest point. The wooden cross marking the summit is about 8,600 ft. above the sea. The broad valley on the N. side of the pass is one of the most singular in the Alps, as it extends for several miles with a merely trifling inclination, although the torrent has cut a channel of vast depth in its centre. To the l. of the path and somewhat below it, is the *Lago Bianco,* a small lake formed by the melting of the snows. Its S. end lies close to the Watershed between the Oglio and the Adda, but its stream flows through Val Gavia to the latter river. The tract now traversed has been compared to the summit of the Rawyl Pass, to which it offers some resemblance, though but a superficial one, as this is not a plateau, but a flat-bottomed valley enclosed between two parallel ridges. The summit of the pass, and the dreary tract extending through the head of Val Gavia, are ill-famed for the numerous fatal accidents that have befallen wayfarers overtaken by the tourmente on this shelterless wilderness. Many small crosses record these events. One such on the N. side of the pass marks the place where the body of a widow was found whose husband had perished years before in the same manner, a few hundred yards from the same spot. Another records the fate of two monks.

Two paths lead from the summit to Santa Catarina. The Senter di Tresero, keeping to the E. side of the valley, is somewhat longer, but much easier, and is almost universally preferred. On the opposite side is the so-called Senter di Gavia, said to be very rough, and to involve several ascents and descents. For a considerable distance the Senter di Tresero lies over a flat waste paved with small fragments of stone, and watered by rivulets from the snowfields on the adjoining slopes. Only here and there the brilliant colours of the gentian, primrose, and androsace give variety to the scene. Leaving on the rt. hand the rough slopes that lead up to the Sforzellina Pass (§ 37, Rte. B), the traveller approaches the opening through which the Gavia Glacier protrudes its icy tongue close to the track. The main torrent from the Lago

Bianeo has by this time cut a trench of extraordinary depth in the centre of the valley, which widens out, and leaves a mere shelf along which the track is carried. After passing the Ponte di Preda, close to the cascade that falls from the glacier, the path still keeps nearly at a level till it reaches a point where the traveller looks down upon the head of Val Furva, and the sight of pine forests and green pastures relieves the sternness of the scene. A very steep descent leads down to the Ponte della Vacca, the only bridge over the main torrent. After crossing this, a slight ascent leads over the shoulder of the mountain, and the path descends through a lareh forest to Santa Catarina (§ 37, Rte. B).

Route G.

BRENO TO LODRONE, BY THE CROCE DOMINI PASS.

The Pass of Croce Domini, and the paths leading to it on either side, nearly coincide with an orographic and also a geological boundary, between the high granitic ranges that extend northward from thence to Val Vermiglio, and the sedimentary rocks that enclose the so-called Brescian va leys. On the W. side the track here noticed is not particularly interesting; but the beautiful valley of the Calfaro, by which the traveller descends to the Chiese, is scarcely to be surpassed for varied and picturesque scenery. In going to the pass from Breno, it is not necessary to descend along the Oglio to the junction of the torrent from the pass. There is a shorter track by Pedarzo to *Prestine*, and the way then lies along the rt. bank of the torrent, through a glen which, at least in its upper part, is somewhat bare and deficient in striking features. The *Croce Domini Pass*, about 6,500 ft. in height, is the most direct way from Val Camonica into the valley of the Chiese, but is little frequented. *Primula calycina. P. longiflora*, and other rare plants, may be gathered on the ridge a little above the summit. Some redoubts were thrown up here by the Austrians in 1859. The mule-track, after descending the grassy ridge at the summit of the pass, follows a circuitous course, keeping for a considerable distance an easterly direction, until it reaches the upper valley of the Calfaro. The way is thenceforward about due S., by a track along that stream. A more direct course from the pass may be taken through a wild glen called *Val Sanguinera*, which descends SE. to join the Calfaro several miles lower down than the regular path. In ascending from Bagolino, there is not much difficulty in finding the way by the E. slope of Val Sanguinera; but it might be difficult to descend through it without local knowledge, and the scenery of the ordinary path is probably at least as interesting.

The valley of the *Calfaro*, which penetrates by various branches into the group of high peaks to the north, whose summits range from 8,000 to 9,000 ft, abounds with exquisite pictures, and may well induce the lover of nature to devote a few days to its exploration. The main torrent forms some remarkably fine waterfalls: the lowest, about 1 hr. above Bagolino, near the point where the track crosses to the l. bank by a stone bridge, would probably gain celebrity if it were not very difficult to obtain a favourable view of it. Mines have been worked at various points in the valley, but they do not appear to have been productive, and except a few scattered houses of the poorest class, there is no village, or even hamlet, found until the traveller descends to *Bagolino*. Tolerable accommodation is found here at a rustic Inn (kept by Ciappana?). As in other similar places, some patience is necessary for the traveller arriving in a place where there is no provision for his reception, and a foreign visitor is a rare and almost unknown animal. The position of the village (about 2,000 ft. above the sea), on the brow of a steep declivity overlooking the

deep valley of the Calfaro, is very beautiful. A char-road has been constructed through the lower part of the valley, but the judicious traveller who traverses it early in the morning or late in the afternoon will prefer to walk. About 1 m. below the village the well-made new road crosses to the rt. bank, and the valley gradually opens as a rapid descent leads down towards the Lake of Idro. The traveller who would enter the Austrian territory by the bridge of Lodrone may save time by a short cut down grassy slopes, under the shade of fine chestnut trees, and in 1 hr. from Bagolino will reach the bridge which is the boundary of Tyrol (see § 40, Rte. A). The l. bank of the Calfaro belongs to Austria for a distance of about 1 m. only: the frontier line then turns to N., leaving the *Mte. Caren* (6,406′) over Bagolino on the Italian side of the boundary.

Route H.

ISEO TO GARDONE IN VAL TROMPIA.

The traveller wishing to visit Val Trompia (described in the next Rte.) from the Lake of Iseo has a choice of many agreeable paths. The easiest is reached from the village of Iseo by mounting the wooded hills above the lake, which are traversed by many rough paths. In ½ hr. he will fall into a bridle-path leading to *Polaveno*, a poor village in the hills, half-way between Iseo and Gardone. The descent to the Val Trompia is very agreeable, and there is a tolerable road all the way. Gardone is 1½ hr. descending from Polaveno. The whole walk takes from 3 to 3½ hrs.

Another much rougher path leads from Pisogne at the head of the L. of Iseo to Bovegno in 5 hrs.

Route I.

BRESCIA TO LODRONE, BY VAL TROMPIA.

Carriage-road to S. Colombano 30 m.—Bridle-track to Bagolino 3½ hrs.—Carriage-road thence to Lodrone 1½ hr.

The *Val Trompia*, producing the greater portion of the iron used in the manufacture of arms for which Brescia has long been famous, lies immediately to the N. of that city, and is drained by the *Mella*, a stream that enjoys the distinction of being mentioned in the verses of Virgil and Catullus. The scenery of the valley is pleasing; and the route here indicated is the most direct, and perhaps the most agreeable, for entering the Italian Tyrol from Brescia.

There is a good road as far as Bovegno, which has been lately continued as far as S. Colombano at the head of the valley. An omnibus plies daily between Brescia and Bovegno, leaving the city at 3.30 P.M., and returning at 4.30 A.M., on the following morning. The hills begin to rise on either side of the Mella very soon after the traveller leaves Brescia, but do not deserve the name of mountains until he approaches

Gardone (Inn: Stella d'Oro, in the little piazza, good and reasonable), the principal place in the valley, 12 Italian or nearly 14 English m. from Brescia. The valley is rather thickly peopled, and there are many iron-works connected with the mines which are worked at many places in the mountains at the upper end. The road is carried all the way along the l. bank of the Mella to *Bovegno* (accent on the first syllable). There is here a very fair inn. Above this village the scenery becomes more interesting; the torrent of the Mella brawls between siliceous rocks, probably referable to the *verrucano*; and alpine plants, such as *Silene rupestris*, descend to the banks. The road passes *Collio*, a poor village about 4 m. from Bovegno, and ends about 2 m. farther at *San Colombano*, with several scattered groups of houses, and a small

establishment, prettily situated, where patients come in summer to drink the waters of a mineral spring. Here commences the ascent to the pass connecting the head of Val Trompia with the valley of the Calfaro. There is a well-traced bridle-track which mounts by zigzags, keeping a direction nearly due E. between the Monte Maniva to the N., and the Dosso Alto, on the S. of the pass. The latter mountain has been visited by Zantedeschi and other botanists, who have found on it many of the rarest species of this district. In the upper end of this valley, and in that of Calfaro, the botanist will observe *Arabis Halleri*, here rather common. There is a shed at the summit of the pass where wayfarers usually halt for refreshment. In 1862 it was occupied by an old man who declared that he had spent fifty-six summers in the same place!

The descent into the valley of the Calfaro is by a very rough track, which may, however, be avoided by short cuts in many places. The views gained throughout the way to Bagolino (Rte. G) are very beautiful, and the traveller may well be tempted to make that village his head-quarters for one or two days, in order to explore the upper part of the Calfaro valley. The way to Lodrone is noticed in Rte. G. The hurried traveller who wishes to descend at once to Lodrone may probably save some time by avoiding Bagolino. The writer believes that there is a track on the S. side of the valley by which the new road may be reached at or near the bridge by which it passes to the rt. bank of the Calfaro below Bagolino.

Route K.

BRESCIA TO VESTONE IN VAL SABBIA.

This Rte. is indicated here, although information as to details is completely defective, in order to call attention to the fact that there is a road, completed within the last few years, which offers a direct and agreeable way for a traveller wishing to visit the Lake of Idro, described in the next section, from Brescia. It is carried through a hilly country commanding fine views at some points, and traverses *Preseglie* before reaching the main road through Val Sabbia at Barghe. That hamlet is about 3 m. below Vestone, which is farther noticed in § 40, Rte. A.

SECTION 40.

ADAMELLO DISTRICT.

Travellers who attain to a commanding height on the S. side of the Pennine Alps usually see in the far east an extensive range of snowy Alps crowned by some high conical peaks. One after another has satisfied himself with the assurance that the most prominent of these peaks must be the Orteler Spitze, and people have come to fancy that they recognised the peculiar form of that mountain, although in fact it is so situated that nothing beyond the bare summit of the peak can be seen from the westward above the range of Monte Cristallo. A reference to the map and a compass would usually have sufficed to show the careful traveller that the snowy range in question lies considerably to the S. of the Orteler group, and might perhaps have had the effect of sooner drawing attention to one of the most extensive of the higher masses of the Alps, which we here distinguish by the name of its best known summit as the Adamello group. The absolute height of the peaks, not quite attaining 11,700 ft., does not give a measure of the vast mass which is here lifted above the level of the surrounding valleys, and of the great tracts of glacier and névé that feed two of the most considerable

streams of the Southern Alps — the Sarca and the Chiese. On the W. side several short glens descend towards Val Camonica, and bear down tribute to the waters of the Oglio; but the larger portion of the drainage of the glacier region is carried into the Sarca, and ultimately reaches the Lake of Garda.

The principal mass to which the foregoing remarks apply is formed of a remarkable granite, highly crystalline in texture, containing much amphibolite, and, so far as the writer has seen it, nowhere exhibiting the gradual transition into gneiss which is so commonly visible in the Alps. Extending southward through the ridges that enclose the head waters of the Chiese, the same granite forms on the one side the peak of Monte del Castello, and the adjoining summits to the S.; and on the other, the Monte Grisa (9,749′), and the range at the head of Val di Breguzzo. There is reason to think that this is by far the most considerable mass of true granite in the Alps.

A zone of metamorphic rocks is traceable along the E. side of the granitic range, and may possibly extend some way along the N side, in Val Vermiglio; but towards Val Camonica the granite appears to come in immediate contact with the gneiss that prevails in the upper part of that valley.

A glance at the geological map shows that a line drawn SSW. from Dimaro in Val di Sole to Condino on the Chiese nearly coincides with the boundary between the metamorphic rocks, above spoken of, and the jurassic limestone, which is here for the most part converted into dolomite. It will be observed that the same boundary also coincides with a line of depression occupied by four valleys which are connected by two low passes, extending about 50 m. nearly in a straight line to Vestone in Val Sabbia. It may also be remarked that the same line is parallel to the valley of the Adige, the Lake of Garda, and the principal portion of Val Camonica.

The district briefly described in the present Section includes the granitic range whose chief summits are the Presanella (11,688′), the Adamello (11,667′), and the Carè Alto (11,352′); and, in addition to this, the high mass of dolomite mountains lying between Val Rendena and Val Selva to the W., and the Val di Non and the Adige to the E. We also include the beautiful region extending southwards towards the plains of Lombardy between the Chiese and the Lake of Garda.

It is impossible to look at the map of the district here defined without being struck by a characteristic peculiarity in the course of the two chief rivers and their tributaries. These flow either from NNE. to SSW. along the main valleys, or else through narrow clefts whose direction is nearly from W. to E., so that the course of each of the principal streams makes one or more sharp elbows.

If the writer is not misled by personal predilection, the portion of the Alps now to be described is one of those most abounding in attractions. The peaks do not rival the greater giants of the Alps; but they rise out of low valleys, so that their relative height is very great. The scenery of Val Rendena is pre-eminent for the charm of variety. On the one side is a vast glacier region, but partially explored, whose peaks are probably all accessible; on the other is a group of dolomite mountains, of which the highest—the Brenta Alta (10,771′)—is inferior only to the Marmolata in height, and fully equals it in the boldness and inaccessibility of its towers and pinnacles.

Much additional information as to this district has been recently obtained. The writer has paid to it several too hurried visits, but has not been fortunate in regard to weather. He has been lately followed by several English mountaineers, and by Lieut.-Col. von Sonklar, but the most persevering and successful explorer has been Lieut. Julius Payer, to whose valuable paper, published in Petermann's 'Geograph-

ische Mittheilungen,' the reader is referred for details.

The stranger in this district is apt to encounter more difficulty than usual in the Alps in ascertaining the names of the mountains. As a general rule, the native mountaineer takes no especial notice of the peaks of the Alps. At an early period the mountain pastures to which he resorts with his cattle had acquired distinct names, as did also the passes leading from one valley to another; but in the great majority of cases the names of the summits have remained vague and uncertain, except where regular surveys, or at least the visits of strangers, have fixed specific names to certain peaks. In this district scarcely any strangers have been seen, excepting the officers employed on the Austrian Survey, who have usually been unfamiliar with the language of the people, so that the nomenclature remains in its natural unsettled condition. The native term *vedretta*, applied either to a glacier or snow-field, is collectively given to portions of the snowy range including several peaks, and has been incorrectly attached to one or other of these by the persons engaged in mapping the district.

The writer is happy to adopt nearly all the names proposed by Lieut. Payer, save as regards the two great glaciers at the head of Val di Genova, for which he has maintained the designations adopted by von Sonklar, since followed by Mr. Tuckett, and by himself, and certainly used by some, if not all, of the herdsmen at the head of the valley.

The heights of the peaks in this group do not appear to have been accurately determined, and it is questionable whether those of the Austrian Kataster are not too low by nearly 200 ft. There is no guide in Val Rendena who can be safely recommended as a companion in glacier excursions. Matteo and Bonifazio Nicolosi of Molveno are good cragsmen, and with some practice may perhaps become efficient guides. Fair accommodation is found in most of the villages in this district, and there are good country Inns in the larger places, such as Storo, Condino, Tione, &c. The best head-quarters for a mountaineer are found at Pinzolo, near the head of Val Rendena.

Route A.

MALÈ TO SALÒ ON THE LAKE OF GARDA, BY VAL RENDENA AND THE LAKE OF IDRO.

	Hrs.' walking	Eng. miles
Dimaro	1	3
Campiglio	3	8
Pinzolo	3	8
Tione	3½	10½
Condino	4½	13½
Lodrone	2	6
Vestone	4	12
Salò	4	12
	25	73

A tolerably good carriage-road runs all the way, except between Dimaro and Pinzolo, where there is a frequented bridle-track. The route here laid down lies for the most part along, or very near to, the boundary between the older metamorphic rocks and the jurassic limestone; so that nearly all the way from Dimaro to the Lake of Idro the traveller has granite or metamorphic rocks on his rt. hand, while on the other side crystalline limestone and dolomite form peaks that present a striking contrast to the others in shape and appearance. Close to Dimaro (§ 37, Rte. B) the Melledro issues from a narrow glen called *Val Selva*, and the way to Val Rendena is by a rough track that mounts rather rapidly along the base of a range of limestone crags. The W. side of Val Selva is densely wooded, as the name imports, but the axe has begun to devastate the primæval forest. Towards the head of the glen, in boggy ground near the track, the botanist may gather three British plants—*Andromeda polifolia*, *Carex pauciflora*, and *C. limosa*—all of them, but especially the first, very rare on the S. side of the Alps. The pass leading from Val Selva to the basin of

the Sarca is a deep depression in the high range which elsewhere encloses the head of that river, and is not more than about 5,200 ft. in height. The ridge, locally called *Ginevrie*, is partly covered with wood, and an easy descent leads from it to the pilgrimage church and inn of *La Madonna di Campiglio* (4,955′). Rough but clean quarters, are found at this attractive spot, commanding fine views of the *Monte Spinale* (8,198′), which is accessible without much difficulty; and the expedition may be recommended to the botanist, who will there find many of the characteristic plants of the dolomite mountains. The valley leading to Pinzolo is called *Val Nambino*; and its upper portion is open, affording most striking views of the neighbouring peaks. The Nambino torrent flows from a recess in the mountains S. and E. of the Monte Spinale; and by that way there is a pass to Val Sporeggio, a lateral valley of Val di Non (see Rte. H). The track to Pinzolo keeps to the slopes above the rt. bank of the Nambino, and leaves on the opposite side of the valley the opening of Val Brenta and Val Agnola, which run deep into the mass of the Brenta Alta, whose wonderful towers and pinnacles remain in view all the way to the chapel of St. Antonio. The descent then becomes more rapid; the torrent issuing from Val Nambrone descends on the rt. from the recesses of the Presanella, joins the Nambino, and both together very soon enter the head of Val Rendena. The first hamlet is Caresolo, and about ¾ m. farther the traveller reaches

Pinzolo (2,514′). In this remote spot, persons not over-fastidious find very fair accommodation, much civility, and very reasonable charges, at an Inn kept by Bonapace, which stands a little way to the l. of the road in entering the village by the road from Tione. Improvements will doubtless be made as the place becomes more frequented by strangers. Many days may be well spent here in excursions, a few of which are noted here, but each traveller may strike out new expeditions for himself.

Val Rendena is the name of the inhabited portion of the upper valley of the Sarca extending NNE. from Tione to Caresolo. It is one of the deepest of the interior valleys of the Alps, not rising more than 600 ft. in a distance of 10 m. Near Pinzolo the Sarca issues from *Val di Genova*, a glen clothed with dense forests, through which it has flowed for many miles nearly due E. In this wild valley there is no permanent dwelling, and it was almost unknown, save to the native hunters and herdsmen, until of late years, when the woods have been thinned to supply fuel for glass-works at Tione, and cart-tracks have been carried up it for a considerable distance (see next Rte.). The churches in Val Rendena deserve the attention of the antiquary, and there are two near Pinzolo which the stranger should not omit to visit. That nearest the village, scarcely ¼ m. distant, is dedicated to San Vigilio, and is covered within and without with frescoes. Those outside, though suffering from time and neglect, are the most remarkable; and portions of a Dance of Death, which are in tolerable preservation, and bear the date 1536, have considerable merit as works of art. The frescoes of the interior, illustrative of the life of St. Vigilio, are inferior in design. More interesting than this is the small church of San Stefano, also adorned with frescoes, and standing on a rock at the opening of Val di Genova. It appears to be very ancient, and contains a long inscription, recording the passage of Charlemagne through the valley with a body of 4,000 knights, &c., and the Privilegium accorded to the church by that Emperor and the reigning Pope (Eugenius).

Those who do not attempt the ascent of the Presanella may make an agreeable excursion, which will give them some insight into the topography of that fine mountain. Rather more than 1 hr. from Pinzolo is a noble waterfall of the copious torrent from the *Alp of*

Nardis, where the minor streams arising from the snows of the Presanella, and several masses of glacier lying on its flanks, unite and fall in a succession of cascades into Val di Genova. A rough path mounts on the E. side of the waterfall, not commanding very favourable views, and continues to ascend, chiefly amidst wood, till, in 4½ hrs., the malga of Nardis is reached. Some way to the l. of the path is another waterfall, which seems even finer than the first, but it would take some time to approach it.

There can be no doubt that the *Presanella*, here called *Cima di Nardis* (11,688′), is most easily accessible from the *Vedretta di Nardis*, which descends SE. from the peak. The summit was first reached in 1864 by Messrs. Freshfield, Beachcroft, and Walker, with François Devouassoud. Sleeping at a shepherd's hut in Val Presena near Pizzano, they ascended by the W. side of a small glacier to a pass, the *Passo di Cercen* (10,030′?) of Payer—not to be confounded with that of the same name between Rabbi and Pejo. Turning eastwards, they climbed steep ice-slopes to the arête connecting the E. or highest peak with the W. summit. The former was attained by the somewhat difficult arête in 3½ hrs. from the col. The second ascent by Lieut. Payer was made about three weeks later. With three natives of the valley, he slept at the highest hut in Val Rocchetta. From thence they climbed to a depression, seen from Pinzolo, between the *Cima delle Rocchette* (10,777′), and a summit S. of it called *Cima delle Ghiaje* (9,880′). Keeping to the E. side of the former peak they reached the Vedretta di Nardis, crossed that glacier high up, and reached the peak from the E. side, by snow-slopes overlooking the head of Val Nambrone.

The traveller who would vary his way back to Pinzolo, may mount for some distance above the malga to a gap in the steep ridge to the rt. called *La Porta dell' Amola*, which is occasionally used by the herdsmen to pass from the Alp of Nardis to that of Amola at the head of Val Nambrone. It is marked by a small wooden cross, and is about 9,000 ft. in height. *Val Nambrone* is a very wild steep glen, with several branches, each of which leads to one or more small alpine lakes. The descent is rapid, but the way is rather long, and 4 hrs. may be allowed for returning from the malga to Pinzolo.

In marked contrast to the scenery of the granitic ranges, the *Brenta Alta*, with its towers and crags of dolomite, rises E. of Pinzolo, but is divided from Val Rendena by a much lower secondary range parallel to the direction of the main valley. A very agreeable expedition may be made by following the track through Val Nambino for about 1½ hr. from Pinzolo, and then turning abruptly to the southward through the short and very picturesque glen of *Val Agnola*, lying between the main mass of the Brenta Alta and the secondary ridge dividing it from Val Rendena. At the head of this glen the traveller, by bearing to the l., may reach a wild hollow in the mountain where rocks and vast piles of débris are surmounted by a small glacier lying on the S. side of one of the higher peaks of the Brenta Alta. By keeping well to the l. along the base of some nearly vertical rocks, it is not difficult to reach the glacier without danger, and by that way it may be possible to attain the top of the peak in question, which is not, however, the highest, and which is separated from the adjoining summits by vertical clefts of great depth. It is dangerous to approach the small glacier by climbing the rocks below it, as masses of ice are occasionally detached, especially during the warmer hours of the day. Instead of bearing to the l. at the head of Val Agnola, the traveller, by keeping due S., will reach a tolerable path that turns to the rt., or about due W., lying for some distance nearly at a level, and leads him to the head of a short glen or recess in the mountains, where several small streams unite to form a torrent that flows into Val Rendena

about 1½ m. below Pinzolo. The upper part of this recess is called Brenta dell' Orso, and it offers the most direct way for approaching the Brenta Alta from Pinzolo, as but a short descent is required to reach the above-mentioned hollow immediately below the higher peaks of the mountain. If the traveller who has attained the head of Val Agnola leaves on his rt. hand the track to Brenta dell' Orso, and continues to mount towards the S., he will reach in about 1 hr. more the summit of a ridge called Prà Fiorì, overlooking the head of Val Dalcon, which joins the Sarca about 1 m. W. of Stenico (Rte. D). By that way, though it requires more time, the traveller leaving Pinzolo may reach the Baths of Comano (Rte. D). The shortest way for returning to Pinzolo from the Prà Fiorì is by Brenta dell' Orso. Many rare plants may be gathered on the rocks of the Brenta Alta, which mountain appears to be the western limit of several of the species supposed to be peculiar to the dolomitic region between the Adige and the sources of the Drave. The following species are here found exclusively on calcareous rock :—*Papaver pyrenaicum*, *Arabis pumila*, *Dentaria polyphylla*, *Alsine austriaca* and *A. lanceolata*, *Cherleria imbricata*, *Cerastium ovatum*, *Potentilla nitida*, *Saxifraga sedoides*, *Peucedanum austriacum*, *Heracleum pollinianum*, *Crepis Jacquini*, *Phyteuma comosum*, *Pæderota Bonarota*, *Euphrasia tricuspidata*, *Carex baldensis*, and *Sesleria sphærocephala*. Near the ridge of Brenta dell' Orso, the three European species of *Rhododendron*, *R. ferrugineum*, *R. hirsutum*, and *R. chamæcistus*, may be seen growing very near together a very unusual association. Lower down, on rocks above the highest châlet (malga), grows *Artemisia lanata*.

Another excursion to be made from Pinzolo is to the Lake of San Giuliano, lying high up in the mountains on the W. side of Val Rendena. It is possible to descend from it to Strembo, lower down in the main valley. If it be practicable to reach the upper part of Val di Borzago, and then descend to Pelugo, the circuit could not fail to offer very fine scenery.

Most travellers keep to the road from Pinzolo to Tione, although it is possible to follow a track along the E. bank of the Sarca nearly all the way. The villages and hamlets follow each other in rapid succession. The comparatively dense population of this and the adjoining districts is supported by the migration to the large towns of many young people of both sexes. The upper valley of the Sarca, and that of the Chiese, as far down as Condino, make up the district called *Giudicaria*, from the fact that for many centuries it retained local rights, and separate administrative institutions, under local magistrates, subject to the bishops of Trent.

Near *Pieve di Val Rendena*, which possesses the principal church of the valley, is shown the site, marked by an ancient church, where St. Vigilius, who first preached the Gospel in these parts, was stoned. At *Pelugo* (2,144′) a short way below Pieve, is the opening of *Val di Borzago*. Through this the first ascent of the *Care Alto* (11,352′), the third in height, but the boldest in form of the granitic peaks of this district, was effected in 1865 by Messrs. Sedley Taylor, and Montgomery. Ascending by a path that crosses a shoulder of mountain at a great height above the l. bank, they slept at a comfortable châlet on that side of the valley. On reaching the glacier they worked obliquely across it till they reached the NW. arête, and attained the top by cutting steps up extremely steep ice-slopes. About 2 m. lower down is the opening of the *Val di San Valentino*, leading to the upper end of *Val di Fum* (Rte. C). In descending gently from Villa to Tione, the traveller will observe (jurassic ?) limestone on the W. side of the valley, with the strata tilted into a nearly vertical position. As a general rule, the valley coincides very nearly with the W. boundary of the secondary strata. Keeping at

some distance from the Sarca, on undulating ground above its rt. bank, the road leads in 1 hr. from Villa to

Tione (1,919′), the principal place of Val Rendena, and of the district of Giudicaria. There is here a very fair country Inn (Corona) with reasonable charges, but a new house (Cavallo Bianco?) was open in 1863: the landlord is said to take undue advantage of strangers. The position of Tione is extremely picturesque. It is plainly seen from the neighbourhood of the village, that the true line of the main valley is that which extends SSW. in the same direction as Val Rendena. But, instead of finding its way in that direction, the Sarca turns abruptly somewhat N. of E., and descends to Le Sarche by the remarkable cleft described in Rte. D. The road to the Lake of Idro ascends gently from Tione above the l. bank of the *Arno*, as the stream is called which unites near *Bondo* the copious torrent issuing from *Val Breguzzo* with a lesser stream descending from Val Gavardina (Rte. F). The road soon reaches, at Roncone, the low ridge (about 2,280′) that separates the Arno from the Chiese, and then descends by a rather more rapid slope to the opening of *Val Daone*, an important lateral valley, through which the principal source of the Chiese flows from the glaciers at the head of the Val di Fumi (Rte. C). A considerable number of villages and hamlets are grouped about the point where the Chiese enters the main valley through which it descends to the Lake of Idro. The chief of these is *Pieve di Buono*, situated on the main road. Amidst very beautiful scenery, the traveller continues his route to

Condino (1,446′), the chief place in the upper valley of the Chiese, with several Inns, of which the largest (Alb. della Torre) supplies very fair accommodation. A geologist would find interesting occupation in tracing the distribution of the erratic blocks from the range of the Adamello and Presanella through the extensive district in which they are more or less abundant. If the writer is not misled, a careful study of the subject may lead to important conclusions. These erratics are so abundant, and of such large size, that they have been extensively applied to economical purposes, and in Condino and other villages the traveller will observe the remarkable granite in question, here called *pietra salaccia*, universally employed for doorposts, lintels, flags in doorways, and various other uses. The erratics of the main valley have in great measure disappeared, being those readiest to hand, and exposed to many agents of destruction; but they still exist in abundance on *both slopes* of the valley of the Chiese, up to at least 1,000 ft. above the river. See further remarks in Rte. E. Leaving to the l. the bridge leading to Storo, the road is carried along the rt. bank of the Chiese to *Lodrone*, a small village N. of the Calfaro, which here descends from Bagolino (§ 39, Rte. G) to join the Chiese. The first-named stream here forms the frontier between Italy and Austria, and custom-house officers await the traveller on either side of the bridge. On the opposite side of the Chiese the Austrian frontier extends down to the N. end of the Lake of Idro. On approaching the lake, the scenery of the valley, though still beautiful, loses much of the boldness that has hitherto characterised it. The mountains subside to a lower level, and are in great part clothed with deciduous trees.

The *Lake of Idro* is the smallest of lakes lying in the line of the greater valleys that descend to the plain of N. Italy, and lies higher than any of them. It is about 7 m. in length, little more than 1 m. in its greatest width, and about 965 ft. above the sea. The short valleys and dells on the E. side of the lake are remarkable for the richness of their flora, which includes many very rare plants, mostly the same that are characteristic of the flora of Val Vestino (Rte G). The geologist or botanist wishing to examine the glen above *Bondone* should do so from Lo-

drone, before he has passed the Italian frontier; while the Monte Stino, lying in Italy, may better be visited by taking a boat from Anfo, and landing at the opposite side of the lake.

[*Bondone* is a remarkably picturesque village, perched on the summit of a very steep rock just above the N. end of the Lago d'Idro, and nearly 1,000 ft. above its level. Erratic blocks of granite, and the other rocks prevailing in the valley of the Chiese, extend some way above the level of the village. By the glen called Val Bondone the traveller may reach Magasa, at the head of Val Vestino (Rte. G), over the ridge of the Monte Tombea, or by bearing to the l. will approach the Cima Spessa, commanding a fine view of the valley of the Chiese and the neighbouring ranges. Besides many other interesting plants, the botanist may gather here a curious Cichoraceous plant—*Hypochæris Facchiniana* of Ambrosi.]

The carriage-road is carried along the W. shore of the Lake of Idro, above which rises about midway the picturesque castle of *Rocca d'Anfo*, and a little farther S. the village of *Anfo* is passed. Soon after escaping from the lake, the Chiese forces its way in foaming rapids through a barrier of red slate, and thenceforward pursues a sinuous course on its way to water the plain of Lombardy between Brescia and Lonato. Between the lake and the plain, the valley drained by the Chiese is called *Val Sabbia*, a fruitful district, formerly rich in wine and silk, but it has suffered by the recent epidemics. The chief place is *Vestone*. 'Travellers should beware of Lecchi, innkeeper, near the (south) gate of Vestone. There is another Inn farther on (Tre Spade), recommended in preference.'—[M.] The way from Vestone to Salò is a very agreeable drive, when the heat is not excessive. The road soon crosses to the l. bank of the Chiese, and passes Barghe, Sabbio, and Volzano, besides other smaller places. Nearly 3 m. below the last-named village the road to Salò turns abruptly to the l., and rather unexpectedly descends a short but steepish slope to reach the town.

From *Salò* (Inn: Gambero, good), an omnibus plies twice daily to Brescia. For the Lake of Garda, see Alpine Guide, Part III.

Route B.

PINZOLO TO EDOLO, BY VAL DI GENOVA.

As mentioned in the last Rte. the inhabited portion of the upper valley of the Sarca terminates at Caresolo, the highest village in Val Rendena. Here the river makes one of those sharp bends characteristic of the orography of this district, and the *Val di Genova* through which it descends from its parent glaciers opens nearly due E. of that village. Until lately, unknown even by name to most Alpine travellers, this valley is surely destined to attract many future visitors, if the combination of all the elements of picturesque beauty suffices to recommend it. Nowhere else, not even in the Italian valleys of Monte Rosa, is the rich foliage of the chestnut brought so nearly into combination with the scenery of the ice-region. If it be true that no first-rate peaks are in view from the floor of the valley, the combination of forest and craig with glaciers of the grandest characters, and frequent waterfalls, any one of which would make the fortune of a Swiss valley, entitle this to rank among the most beautiful in the Alps. The increasing demand for timber to supply glassworks at the opening of the valley first set the axe of the woodcutter to work. This has led to the establishment of several sawmills, and a rough cart-track has been carried for several miles up the valley. The best mountaineer here is probably a chamois hunter, named Fantoma, but it seems that his character does not stand high, and the writer cannot recommend him as a guide. Girolamo Botteri, once an

active sportsman, but quite incompetent on ice, a man of substance, respected by his neighbours, has much local knowledge, and may be consulted with advantage. He accompanied Lieutenant Payer throughout his excursions in 1864, but is slow, and was found an incumbrance in glacier expeditions. Cesare Caturani, who has been employed by Lt.-Col. Sonklar, and by the writer, knows the valley well, and may be useful as a porter, but is no mountaineer.

A slight ascent, passing the Church of St. Stephen (Rte. A), and the glass-works, leads from Pinzolo to the entrance of Val di Genova. For nearly 2 hrs. the track keeps to the l. bank, passing close to the waterfall of Nardis (Rte. A). About 1 hr. farther, on the opposite side, near to the sawmills of Casol, are the still finer falls of Laris, formed by the torrent from the extensive *Vedretta di Laris*, which springs over three successive ledges of granite, measuring in the aggregate from 400 to 500 ft. in height. This part of the valley is known as Pian di Genova, being a nearly level tract about 3,650 ft. above the sea. Higher up the valley bends to NW. and the cart-road comes to an end on the rt. bank, at a spot called Ragada, where other sawmills are worked by the stream descending from a short and steep glen called *Val de Fargorida*. Hereabouts are a few patches of rye and flax, the only attempt at cultivation in the valley. The grandeur and beauty of the scenery constantly increases as the traveller advances. On his rt. hand he passes the opening of three narrow glens running up towards the Presanella. First comes *Val Rocchetta*, through which Lieut Payer made his ascent; then *Val Gabiol*; lastly, *Val di Cercen*, down which Mr. Freshfield and his companions descended, after accomplishing the first ascent of the peak. Near the opening of the last-named glen, the main stream of the Sarca springs over a series of ledges, the highest of which forms a very fine fall. It is easy to approach within a few feet of the brink. Here the course of the Sarca forms the first of those sharp elbows for which it is remarkable throughout its career. In ascending the valley bends abruptly to SE., and the two great glaciers that close the head of the valley come suddenly into view. Between the ice falls that nearly meet at its base, rises the dark pyramidal summit of La Lobbia (9,696′), whose form recalls that of the Wellhorn as seen from Rosenlaui. It has been ascended by Lt.-Col. von Sonklar. The track soon reaches the malga of *Bedole* (5,079′), which, however, is abandoned in the height of summer. It is ill-situated for a view, as it lies immediately below a pine-covered mound (ancient moraine?), which separates it from the *Malga di Venezia* (5,331′ J. B.), the highest in the main valley. The head of Val di Genova is enclosed on the NW. and W. sides by a range of granite precipices that are broken through only by one gap, giving passage to the final ice-fall of the Bedole Glacier. S. of the fall, portions of the upper glacier hang over the edge of very steep rocks, threatening peril to any one who should attempt the escalade; and the glacier rests its rt. flank against vertical rocks at the base of La Lobbia. E. of this peak, the Matarotto Glacier falls due N. into the head of the valley, leaving but a narrow space between the bases of the two ice-falls. We here retain the name *Vedretta di Bedole*, used by the herdsmen and by von Sonklar for the larger glacier. This is the Vedretta del Mandron of Payer, and Vedretta di Caresolo of the Austrian military map, and including the great snow-fields at its head that feed also the glaciers of Adame and Salarno, is by far the most extensive in the Austrian Alps. Its eastern rival, here called *Vedretta di Matarotto*, is the Vedretta della Lobbia of Payer. The lower ice-fall of this glacier is perhaps not utterly impracticable, as that of Bedole seems to be, and in any case it should not be difficult to make a track along the E. base of the Lobbia at some height above the

ice-fall, which would lead without much difficulty to the upper plateau, and much shorten the way to Val di Fum, or for the ascent of the Adamello.

Three passes from the head of Val di Genova to Ponte di Legno in Val Camonica are known to the native hunters. All are approached by ascending along the course of a torrent that falls into the valley from the N., a little above the malga of Bedole. After a steep climb of 1,800 ft., the traveller finds himself on a level with the top of the precipices enclosing the head of the valley, and ascending slightly in a westerly direction, he may before long reach a shepherd's hut, or *Mandron*, which has sheltered some explorers of this region.

The easiest pass is, according to Payer, called *Passo del Lago Ghiacciato* (about 9,437′). A second pass (marked Pass A. on Payer's map) is apparently that traversed in 1867 by Mr. and Mrs. R. S. Watson, as to which the Editor has been favoured with notes. The way lies straight along the torrent mentioned above, leaving the Mandron at some distance to the l. On gaining a view of the rugged range that encloses the upland basin in which he stands, the traveller sees three depressions, or possible passes, of which that lying most to the rt. is to be chosen. It is immediately on the W. side of a very steep rocky eminence (Corno del Lago Scuro?). The way mounts gently over rough, but not difficult, ground, passing by a small lake, which is rarely free from ice. The descent over glacier does not seem difficult. After ¾ hr. this is left by the W. moraine, and the Val delle Susine (mentioned below) is reached not far above Ponte di Legno. The local guide called this La Bocchetta, and knew no other way across the range. A third pass was traversed by the writer with C. Caturani. It lies much to the l., or SW., of the last, and some way N. of the P. del Lago Ghiacciato. Passing N. of the Mandron, over the ridge called Dosso di Marocaro, and W. of a dark tarn called Lago Scuro, the pass is easily attained. The name Pisgana Pass, proposed in the Alpine Guide, is inappropriate, as the Monte Pisgana, or Piscanno, lies some way NE., and is not seen from the pass. Keeping to local usage, he proposes the name *Bocchetta di Marocaro*. He estimates the height at 9,680 ft. The descent is not very easy, unless there be a better way than that found when the clouds hung about the pass. He kept to the l., and had a little trouble in getting down a steep face of rock coated with ice, that divides an upper from a lower shelf of glacier, sustained by steep and high buttresses of rock that rise to a great height above the floor of the valley. The scenery at the head of Val delle Susine is of extraordinary wildness. Its head is closed by a fine glacier, seemingly not difficult of access. A slope covered with Alpine alder leads down to the pastures of the *Val delle Susine*, and Ponte di Legno is then easily reached in 7 or 8 hrs. from Bedole. The stream descending to Ponte di Legno is called *Narcanello*, but the name *Val di Narcane*, given on the Austrian military map, is not known to the natives. The name *Vedretta di Narcane*, proposed by Payer for the glacier at its head, may well be retained. At the S. end of this glacier rises the

Monte Mandron Alto (10,904′?). If there be a tolerably easy pass on the W. side of that peak, leading to the upper névé of the Bedole Glacier, the ascent of the Adamello might be made from Ponte di Legno, starting very early. No attempt seems to have been made to effect a pass over the range N. of the Adamello, called by Payer *Corni del Confine*. The Lago di Avio may perhaps be reached by that way from Bedole.

In 1864 Dr. Lorenz, with a hunter of Val Vermiglio, whom he commends as a guide, crossed the ridge between the Tonale Pass and Bedole, apparently by the pass called by Payer *Passo di Presena* (9,647′). This lies between the *Corno del Lago Scuro* (10,373′), ascended by M. Payer, and the *Croz di*

Val Zigola (10,059′). The chief summits between the latter and the Presanella are the *Busazza* (10,903′), and the *Cima di San Giacomo* (10,752′).

The most tempting excursion for a mountaineer from the Val di Genova is the ascent of the *Adamello* (11,667′). This is the westernmost of three adjoining peaks that rise a little on the S. side of the summit-level of the great snow-fields at the head of the Bedole Glacier. A portion of the same snow-field surrounds the three peaks on the W. and S. sides, feeding the Glaciers of Adame and Salarno that flow towards Val Saviore, and sending another branch westward to the head of Val di Malga. See § 39, Rte. A. The first ascent was made by Lieut. Payer in 1864 from the *Maudron* hut (mentioned above). The second, from the malga of Bedole, was effected by Messrs. Tuckett, Fox, and Freshfield, in 1865. Both parties made a long circuit by the N. and W. sides of the Vedretta di Bedole, and crossed the great snow-fields to the foot of the Corno Bianco—the easternmost of the three adjoining summits. Lieut. Payer, whose guides remained behind, climbed this in mistake for the Adamello, and afterwards, as did also Mr. Tuckett's party, ascended the latter by its steep eastern face. The S. side shows above the glacier a range of steep rocks, and the N. face sinks in formidable precipices towards the Lago di Avio. The W. side alone offers a gentle slope, not requiring the use of the ice-axe. Mr. Tuckett's party effected a difficult descent from the plateau by rocks to the rt. of the ice-fall that closes the head of Val di Miller, the highest branch of Val di Malga; and arrived at Edolo the same evening. It would perhaps be easier to reach the good inn at Cedegolo by descending to Val Saviore by the Glacier of Salarno, or that of Adame. From the ridge to the left of the latter, it is certainly possible to reach the head of Val di Fum.

For the traveller who seeks to reach the Adamello from Pinzolo, without taking the head of Val di Genova on his way, the shortest way is to ascend the short glen called *Val Fargorida*, whose torrent joins the Sarca at Ragada. At the upper end is a malga which belongs, as do several others in the valley, to Girolamo Botteri. Here, at about 6,740 ft. above the sea, there is better shelter for the night than at the *Mandron* above Bedole. The *Vedretta di Fargorida*, a small glacier overlooked on the SW. by the *Crozzon di Laris* (10,889′) and on the SE. by the *Crozzon del Diavolo* (9,956′), closes the head of the glen. Between the two peaks is a gap, called by Payer *Passo del Diavolo* (9,541′), by which it may be possible to reach the Vedretta di Laris, lying on the S. side of the pass. The traveller going from the Malga to the Adamello, or to Val di Fum, leaves the glacier of Fargorida on his l. hand, and ascends in a SSW. direction to the *Passo dei Topeti* (9,126). Rather steep slopes, nearly bare of snow, lead to the top, where the traveller finds himself on a level with the upper plateau of the *Vedretta di Matarotto*. This is divided from the Vedretta di Bedole by a high range, including four principal summits. The southernmost of these has been called *Monte Fumo* (10.682′), though that name does not seem to be known to the herdsmen in Val di Fum. The whole range from thence to the peak rising above the head of Val di Genova has been collectively called Lobbia; but Lieut. Payer, who was the first to traverse it, gives to the latter summit the name *Lobbia Bassa* (9,696′). S of this, and separated by a pass—*Passo della Lobbia Bassa* (9,541′)—is the peak which he has called *Lobbia Alta* (10,578′). To this succeeds a broad snow col—*Passo della Lobbia Alta* (9,956′), followed by the *Dosson di Genova*, attaining a height of 10,890 ft., the steep ridge extending southward to the Monte Fumo. The way from the Passo dei Topeti to the S. base of the Adamello lies in a straight line nearly due W., across the névé of Matarotto,

over the Passo della Lobbia Alta, and then over the plateau at the head of the Bedolc Glacier. The distance may be accomplished in from 3 to 4 hrs., according to the state of the snow.

The heights assigned to peaks and passes in this Rte. do not all rest on accurate observation, and may require further verification.

Route C.

CONDINO TO EDOLO, BY VAL DAONE.

It had often struck the writer as a very singular fact, that there should be a valley more than 20 m. in length without a village or hamlet, in a part of the Alps where the valleys are, as a general rule, deeply cut into the mountain ridges. Such, however, is the valley of the Chiese, as represented on the Austrian maps, above the point where it enters the main valley near Pieve di Buono (see Rte. A). Having sought information from intelligent persons residing in the same district, he was led to believe that the valley in question has continued to the present time to be probably the least known of all the considerable valleys of the Alps. Excepting some of the officers engaged on the Austrian map, and one or two botanists who have visited the lower part of the valley, there is no reason to believe that any intelligent stranger has ever explored it. The writer was able to pay it a hurried visit in the beginning of July 1863. That year was remarkable for the extraordinary quantity of snow that fell in this part of the Alps; and, as a general rule, the ridges enclosing the head of the valley, exposed to the full influence of the S. wind, are probably nearly clear of snow in summer; but the high plateau from whence arise the peaks of the Adamello and Carè Alto, is permanently covered with glacier and névé, which extend to the head of Val di Genova. The portion of Lieut. Payer's map representing the N. end of Val di Fum, by no means agrees with the writer's recollection of the ground.

The upper portion of the valley of the Chiese, from the glacier at its head nearly to the base of Monte del Castello, is called *Val di Fum*; and from thence to Pieve di Buono, *Val Daone*. In the Austrian map, the boundary between Tyrol and Lombardy is made to cross the valley, so as to give Val di Fum to Italy, and Val Daone to Tyrol. This may have originated in some claim of the people of Val Saviore, a tributary of Val Camonica, mentioned in § 39, Rte. A, to the alpine pastures of the former valley; but, according to the Tyrolese herdsmen, who now exclusively use those pastures, no such claim is known in practice. The frontier here follows the watershed between the Chiese and the Oglio; and Austrian custom-house officials occasionally make an expedition into Val di Fum, to check attempts at smuggling.

The rocks on the W. side of the valley of the Chiese, between Storo and Pieve di Buono, consist of hard grits, sometimes passing into coarse conglomerate, of various shades of red, grey, and green, and in the lower part of Val Daone pass into a hard, fine-grained red schist, which has preserved very freshly the traces of glacial action. A rather rapid ascent leads from Pieve to the village of Daone, lying close to the opening of the valley; and a tolerable cart-track is carried for many miles along the N. side of the valley. Although there is no village, or even hamlet, above Daone, there are many scattered houses that are inhabited throughout the year. The scenery of Val Daone is of the highest order, gradually exchanging the softer and richer features of the lower valley for the extreme of ruggedness and wildness as it approaches the base of Monte del Castello. The cart-road has been constructed of late years in connection with large saw-mills, where 200 men are employed in summer, at a highly picturesque spot called *Boazze*, about 3 hrs. from Pieve di Buono. Here the

traveller fairly enters into the granitic region, announced to the eye by the bold forms of the mountains. The track passes near to one noble waterfall, and several others are seen higher up. Above Boazze the way is by a very rough path, sometimes not easily found, and mounts through a defile which has the appearance of being a cleft through the granitic mass that henceforward encloses the valley on both sides. The granite here is more varied in structure and appearance than in the Presanella range, some of it being finer in grain, and apparently containing less amphibolite. In one place the writer noticed a curious granitic conglomerate, including fragments of all sizes of different varieties of that rock, cemented together in a granitic matrix. In the way up the valley, the writer passed the recent remains of five considerable avalanches that had fallen during the winter or spring of 1863, bearing down large trees, huge blocks of stone, and masses of rubbish; and in one place above Boazze he traversed what appeared to be the fragments of a rather recent berg-fall from the Monte del Castello. In boggy places, in the hollows of the granite, *Carex pauciflora*, *C. limosa*, and some other interesting plants, were observed; but the flora is less varied than it usually is where the mountains are formed of sedimentary rocks. Not long after passing Boazze, the track crosses to the rt. bank of the Chiese, and thenceforward keeps to that side. Near the last ascent, where it passes close to a waterfall, and then attains the level of Val di Fum, a faint track turns to the l., mounts to a tarn called *Lago di Caf*, and then crosses the ridge that separates it from a larger mountain lake, called *Lago d'Arno*. The stream from that lake joins the main torrent of Val Saviore near a hamlet called Isola, and by that way the traveller may enter Val Camonica, at Cedegolo, nearly 9 m. S. of Edolo.

The *Val di Fum* presents a striking contrast to Val Daone. Extensive pastures spread over the nearly level and broad floor of the valley, and on the lower slopes of the mountains on either side. Some clumps of larches have survived the avalanches and the improvidence of the herdsmen, who have doubtless destroyed much timber for fuel. The scenery would be somewhat monotonous, if it were not for the very fine peak of the Caré Alto, lying somewhat E. of the head of the valley, which rivets the attention of the traveller. There are five châlets (*malghe*) in Val di Fum, and the writer passed the night at the highest of these, reached in about 4 hrs. from Boazze, inhabited during the summer by six or seven men and boys. No reliable information concerning the adjoining peaks or the passes leading into the neighbouring valleys was obtainable from these or other herdsmen lower down in the valley, who were also consulted, except the fact that there is a way to the W. into Val Saviore without descending so low as the pass by the Lago d'Arno. By that way Messrs. Sedley, Taylor, and Montgomery entered the head of the valley in 1865, and in that way Cedegolo is easily reached in one day from Condino. On the following day the same travellers effected the first passage from Val di Fum to Pinzolo. Unfavourable weather made it impossible to fix the position of the neighbouring peaks, so that the exact course taken by them is uncertain. The head of Val di Fum is closed by two branches of the *Vedretta di Fum*, issuing from the same plateau, but divided by a massive island of rock, whose summit rises little, if at all, above the level of the plateau. Ascending by the l. side of the western branch of the glacier till they reached the point where it becomes an impassable ice-fall, they completed the ascent to the plateau by a couloir, and by steep slopes of ice and rock. It is uncertain whether they reached the head of the Vedretta di Laris by a gap in the still unexplored ridge connecting the Caré Alto with the *Monte Folletto* (11,169′), the *Corno di Cavento* (10,994′),

and the *Crozzon di Laris* (10,889′), which form the western boundary of that glacier. It is perhaps more probable that they took the easier course to Val di Genova through Val Fargorida, which may be reached by the Passo dei Topeti, noticed in Rte. B, or by the *Passo di Lares* (9,230′), lying farther S. and leading to the W. side of the Fargorida Glacier.

The writer believes that the upper plateau connecting the glaciers of Bedole and Adame is most easily reached from Val di Fum by the ridge dividing it from Val di Adame.

The herdsmen pointed out to the writer a pass on the E. side of Val di Fum, some way lower down than the highest malga, leading, as they said, either to Val Rendena by the Val di San Valentino, or to Val Breguzzo. After reconnoitring from the ridge W. of the malga, the writer preferred to attempt what seemed to be an easy snow or glacier pass, lying about due E. of the malga, but concealed from it by a projecting mass of the mountain which lies in the way. He was informed that the pass in question overlooked the head of Val di Borzago, which opens into Val Rendena at Pelugo, but that it was impossible to descend into the head of that valley, owing to the *vedretta* (glacier), which was impassable. Starting early next morning with a young man from Condino who knew nothing of the country, the writer reached the pass (about 9,300′), which he ventures to call *Passo di San Valentino*, in 2½ hrs. from the malga, without the slightest difficulty, taking a course by the S. side of the above-mentioned promontory. The descent on the E. side is into Val di San Valentino, as the writer suspected and afterwards ascertained. It was also free from difficulty, but whether over glacier or not it was impossible to say, as the snow lay deep on both sides. A rather steep barrier of rock was descended by keeping to the rt., and below this the snow extended down to a little tarn which was almost concealed by ice and snow. Thence the way lay through a rocky valley, without the slightest trace of path, till the verge of a very steep barrier of rock was reached. The easiest way is probably by mounting a little to the l., and so avoiding the almost precipitous E. face of the barrier. The writer chose a couloir or chimney lying a little to the rt., which was rather troublesome from the masses of rotten snow that partly filled it. At the foot of this couloir is a small grove of birch, and on passing a torrent on the l. hand the first traces of man's presence were seen in the ruins of a shed and sheep-fold. Huge blocks with quite fresh fractures announced a recent berg-fall. Here a rough track on the l. bank of the torrent opportunely appeared, as it facilitated the descent of another steep barrier of rock. Here, in clefts close by the path, was found *Trientalis europea*, being the southernmost point at which that little northern flower, very rare in the Alps, has yet been observed. Before long the highest châlet (malga), not yet inhabited on 5th July, was attained. A tolerable path led down another fourth step in the floor of the valley, the rocks being now composed of mica-schist. The path crosses to the rt. bank of the torrent near a point where a lesser branch of the valley joins it from WSW. It may be that the track indicated on the Austrian map, which leads to the middle part of Val di Fum, passes that way, if it rest upon any other foundation than the reports of chamois-hunters, who may probably have effected the passage at various points in the ridge.

A pleasant walk led down the rt. bank; and the first inhabitant, after satisfying his curiosity as to the unexpected appearance of two strangers in such a place, kindly offered milk, polenta, and even coffee. The usual steep descent by a rough paved track finally led down to Villa, about 1 hr. above Tione (Rte. A.).]

Route D.

TIONE TO RIVA, ON THE LAKE OF GARDA.

Few things are more remarkable in the Italian valleys of Lombardy, Tyrol, and Venetia, than the talent for road-making, which seems innate amongst the population, and is developed wherever scope is given for its display. The great military roads made by the Austrian Government doubtless serves as models; but they have been equalled in many remote valleys by works originated by the communes, and carried out with scarcely any assistance from the Government. One such road is noticed in this Rte., and another in Rte. E. The new road, however, is a circuitous way to reach Riva from Tione, and the pedestrian may take a much shorter and very agreeable walk by Ballino.

1. *Carriage-road by the valley of the Sarca.* About 18 m. to Le Sarche; 15 m. thence to Riva. From the lower end of Val Rendena, near Tione, to the broad valley extending from the Lake of Doblino to the head of the Lake of Garda, the Sarca flows through a cleft, or perhaps rather a series of clefts, through the jurassic and eocene rocks of the range that extends more or less continuously from the Mendola near Botzen to the neighbourhood of Salò. The successive gorges through which the river passes were always deemed so impassable, that the ancient bridle-track was carried at a great height over the mountains on either side, and long ascents and descents greatly increased the distance to be traversed. The new road, executed at the charge of the communes of the valley, is an admirable piece of engineering, and has been achieved at wonderfully little cost. It brings Val Rendena and the intermediate district into direct and easy communication with Trento and with Riva. A post-carriage runs daily between Tione and Le Sarche, where it meets the vehicles plying on the high road between Riva and Trento. After descending from Tione to the bridge over the Arno, the road is carried for some miles through a rich and populous part of the valley on the S. side of the Sarca, till it enters the defile where it was formerly necessary to ascend to a great height above the l. bank of the river. The most remarkable part of the road is where it is carried across to the l. bank, and then returns a short distance farther to the S. side of the stream.

In one place a roof receives a little waterfall that otherwise would fall on the road, and in another a stream that bursts out from the rock is skilfully conducted by an interior channel till it can be allowed to escape. On high ground to the l., not seen from the road, is *Stenico*, one of the chief villages of Giudicaria, with an ancient castle, some Roman remains, and various memorials of the local mediæval history. An interesting walk from Stenico to Pinzolo by Val Dalcon is noticed in Rte. A. A little lower down the valley opens out, and a slight ascent to the rt. will enable the pedestrian who would reach Riva by a shorter way than the road to join the path by Ballino, described below. The valley again contracts, as the road, leaving to the rt. many villages and hamlets, enters a gorge leading to the Baths of *Comano*, near a village of the same name, where a rather large building receives patients during the summer. The water is tepid and tasteless, but is believed to be efficient in some internal complaints. About 3 m. from the Baths the traveller unexpectedly finds himself at the upper end of an extraordinarily deep and savage gorge through which the Sarca descends to the very deep valley through which it is to flow to the L. of Garda. The descent, though long, is now perfectly safe, and may be much shortened by a pedestrian. One portion of the way traversed by the old bridle-track bore the significant name, 'Passo della Morte.' At *Le Sarche*, a hamlet with

a poor Inn, where an omelette and tolerable wine may be had, the traveller joins the high road from Trento to Riva, about 12 m. from the first, and 15 m. from the latter place. That road is described in § 57.

2. *By Ballino and the Lago di Tenno.* 5½ hrs.' walking.

Almost immediately after crossing the bridge over the Arno below Tione, the pedestrian bound for Riva turns to the rt., and follows a good country road to Bolleno, and thence to *Zuklo.* A very agreeable footpath mounts gently from that village, winding along the lower slopes of the mountain, and at last bears to the rt. and enters a hollow which leads in 2 hrs. from Tione to the *Duron Pass*, a low col separated by hills of no great height from the valley of the Sarca. Up to the summit, erratic blocks of granite, some rolled, some angular, are abundant. An easy and agreeable path leads to Rango. On reaching the brow of the hill, there is a fine view over a rich and populous plateau, drained by a stream that joins the Sarca about 2 m. above the Baths of Comano, and enclosed by mountains of bold and varied form. There are many tracks connecting the neighbouring villages, some of them passable for vehicles, and it is not easy to decide as to the shortest way to Ballino. It seems best to pass by Cavrasto, and then by country paths to descend to the stream from *Val Marza*, which has excavated for itself a rather deep channel, and then follow a track which gradually mounts above a marshy plain that extends southward towards the pass leading to Ballino. Peat is here extensively cut, and applied to some industrial uses. The walk is throughout very agreeable, but the most interesting portion is the descent towards Riva. *Ballino* lies on the S. side of a low pass, or gate in the hills, and a new road leads thence to Riva. The traveller, who knows that he has ascended but little above the level of the Sarca at Tione, and who forgets that the L. of Garda is less than 200 ft. above the sea-level, is not prepared for the great and rapid fall towards the lower valley of the Sarca, which becomes apparent only after passing Tenno. On reaching the picturesque *Lago di Tenno*, the traveller should make a short détour in order to reach a favourable point beyond the southern end of the lake from which to enjoy the admirable view of the Lake of Garda, nowhere so well seen as from this side. Below Tenno the new road makes many zigzags, some of which may be cut short by following a rough paved track, and the road finally descends into the main valley about 2 m. from

Riva (Inn: Sole, good; Giardino, improved, cheaper), described in § 57. Travellers are cautioned against hiring chars from the postmaster, who on false pretences extorts more than the tariff rate, while they may be hired for much less from other persons.

Route E.

LODRONE TO RIVA, BY VAL AMPOLA AND THE LAKE OF LEDRO.

Carriage-road—About 28 miles.

It has been seen in several of the preceding Rtes. that a traveller approaching the Italian Tyrol by the road through Val Sabbia (Rte. A), or by the mountain passes from Val Trompia or Val Camonica, will cross the Austrian frontier at the bridge of Lodrone. This is now a tolerably good road leading from that place to Riva, on the Lake of Garda, which for the exquisite beauty and variety of its scenery can scarcely be surpassed by any in the Alps. The road itself, and especially the descent to Riva, is a remarkable piece of engineering; and the more so as, like that noticed in the last work, it was accomplished by the almost unaided efforts of the country people.

Following the road from Lodrone up

the rt. bank of the Chiese, the traveller reaches in about 3 m. the turn leading by a bridge over the river to *Storo*, a large village with a fairly good but dear inn (Cavallo Bianco). This stands close to the junction with the Chiese of a torrent issuing from *Val Ampola*, a narrow lateral glen, or mere cleft in the limestone mountains. Through this the new road to Riva has been carried. It mounts at first about due E.; then, near the junction of a torrent from the S., turns NE., passing one of the small forts or block-houses erected by the Austrians at all points supposed to guard the approaches from Italy to the Valley of the Adige. This was taken in 1866 by the force under Garibaldi, one of the few successes achieved in that miserably ill-conducted expedition. Unless there be a recent change of system, travellers, and men of science should carefully avoid being seen to sketch or make notes of any description within sight of these forts.

After ascending for 1½ hr. from Storo between steep and high walls of limestone, the summit level is unexpectedly attained. The road issues from the cleft near a small shallow pool that sends its water through Val Ampola to the Chiese, and then passes along a marshy tract with no perceptible watershed till a stream begins to descend towards the E., and the *Val di Ledro* opens out in a wide basin enclosed between mountains of moderate height. Several villages are now traversed in rapid succession, in some of which the traveller who would explore the neighbourhood may find tolerable quarters. At *Tiarno di Sotto* the writer once lodged at the Osteria Degara, and had no cause for complaint; on another occasion he lunched at what appeared a decent country Inn on the N. side of the road, at *Pieve di Ledro*. Between these two villages the stream from Val di Conzei (Rte. F) enters the valley from the N. The village of Pieve is but ¼ m. from the charming little *Lake of Ledro* (2,183′), a sheet of water nearly 2 m. long by ½ m. wide, surrounded by sloping meadows and wooded hills, backed by higher mountains to the S. In the heat of summer the difference of very nearly 2,000 ft. of height above the Lake of Garda gives a feeling of freshness that enhances the charm of this spot, which will doubtless become at some future time a place of much resort. The road is carried along the N. side of the lake, but there is a somewhat circuitous path by the opposite shore, and a track leads through a pretty wooded glen to a pass that crosses the frontier of Italy and descends to Tremosine, on the Lake of Garda. The lake and the plateau of Val di Ledro are drained by the *Ponal* torrent, which descends through a short ravine to the Lake of Garda. The road is carried along the northern slope above the Ponal torrent, descending rather rapidly for about 3½ m., and the traveller may fancy himself approaching the level of the lake, when he gains a first glimpse of its waters at a vast depth below him. Skilfully-conducted zigzags lead the road down a buttress of the mountain, but the descent stops short at a point which must be fully 700 ft. above the blue lake. Between the cleft through which the Ponal springs in a pretty waterfall to the lake, and the shore at Riva, extends for about 1½ m. a range of mural precipices, the highest, boldest, and most impracticable in appearance that rise above any of the alpine lakes. The road that descends along the face of this formidable wall of rock is in many places a mere notch cut into its face, and overhung in a somewhat threatening manner by impending masses above. At some points a tunnel has been carried through projecting buttresses, and a little Austrian fort is ready to close this approach to the head of the Lake of Garda. In passing along this remarkable road the traveller enjoys views of exquisite beauty, varying according to the hour of the day, but never more perfect than when

full moonlight is poured over the lake and the mountains. Among the few plants that cling to the rocks are seen *Mœhringia Ponæ*, *Leontodon incanus*, *Piptatherum multiflorum*, and other rarities, along with the evergreen oak, here reduced to a bush, *Colutea arborescens*, and other southern shrubs.

Reference has been made in the preceding Rtes. to the remarkable distribution of erratic blocks of the granite of the Adamello group throughout the lower valleys of this district. The phenomenon is especially deserving of careful study in regard to the plateau of Ledro, lying as it does between the valleys of the Chiese and the Sarca. They are abundant on the plateau, rising to a few hundred feet above the Lake of Ledro, but do not extend into the Val di Conzei. The writer has been assured that they are found abundantly in the lateral valleys S. of the lake, and that a large deposit exists on a slope above the village of Pregasena, near the Italian frontier, S. of the Ponal. Several large blocks may also be seen in the bed of the torrent, descending through Val Ampola. Exact levelling, and a minute knowledge of the Adamello range, which may enable us to trace the origin of special varieties of the granite, are required to give a complete explanation of the mode in which the distribution has been effected.

Route F.

PIEVE DI LEDRO TO TIONE.

The pedestrian going from Pieve di Ledro to Tione has a choice of several interesting paths, though none of them is more beautiful than the road to Storo (Rte. E), and that leading thence by Condino and Pieve di Buono (Rte. A).

The easiest way is by a path that mounts from Tiarno di Sopra to a depression in the range to the W., and then descends the steep side of the mountain to Condino. It is said that the distance from one village to the other may be traversed in 2 hrs. Another and somewhat higher pass connects Tiarno di Sotto with Pieve di Buono, but of this the writer has no information. A longer walk, especially interesting to the botanist, leads by the *Val di Conzei* to the *Gavardina Pass*. A cart-track leads from Pieve di Ledro to Lenzumo, the highest hamlet, and soon after crosses to the rt. bank of the torrent. For a considerable distance the path is carried under the shade of trees, and gradually becomes less distinct as it branches in various directions. A short cut may be made by a steep and rather rough way used by haycutters, and towards the top the way is along a steep slope, with the wooded glen on the traveller's rt. hand, at a considerable depth below him. Some projecting rocks on the ridge close to the pass produce several interesting plants, especially the extremely rare *Saxifraga Tombeana*, nearly allied to the rare *S. diapensiodes* of the Western Alps. 3½ or 4 hrs. may be allowed to reach the pass. The descent through the *Val Gavardina* is easy, and in less than 2 hrs. the traveller will enter the short valley through which the Arno flows to meet the Sarca below Tione. It is not necessary to cross the valley in order to join the high road at Bondo, as there is a good path along the SE. side, but in either case a rather long descent, and corresponding ascent, are needed to reach Tione (Rte. A). If pressed for time the traveller may, on the same day, go on to Pinzolo.

Route G.

STORO TO TOSCOLANO ON THE LAKE OF GARDA, BY VAL VESTINO.

The way here suggested for reaching the S. end of the Lake of Garda from the valley of the Chiese may not, although it offers some fine scenery, be of sufficient interest for the unscientific traveller; but it has especial attractions for the botanist, as there are few stations in the Alps so productive of rare plants as the Val Vestino, here noticed, and the Monte Tombea at its head. The way is rather long, and a traveller wishing to have full time for examining the mountain must content himself with rough but bearable quarters in the village of Magasa.

As mentioned in Rte. A, the head of Val Vestino may be approached from Bondone, a village overlooking the Lake of Idro; but there is a more interesting way through *Val Lorina*, a narrow and deep glen that enters Val Ampola close to the new fort that guards the defile (Rte. E). The scenery of Val Lorina is of the wildest kind. For a considerable distance the way lies at the bottom of the very deep cleft through which the torrent forces its way. This is fortunately a slender stream, which is crossed about thirty times, as either bank becomes impassable, but after heavy rain the passage is impracticable, and communication is then interrupted with the few herdsmen who resort in summer to the head of the valley. Several of the rarest plants noticed below are found here, as well as in Val Vestino. After passing one or two châlets, a tolerable path mounts steeply towards a pass by which the traveller could descend to Tremosine on the Lake of Garda; and by bearing somewhat to the rt., between a low summit called Caplone and the higher ridge of the Tombea, he could descend at once to Magasa at the head of Val Vestino. That would be the most direct way to Toscolano, but would not be suitable for the botanist, whose chief harvest is on the ridge of the Tombea. His course is by a slightly-marked track that winds along the N. face of the mountain, until he finds himself overlooking another branch of Val Lorina. That would seem to have been the more direct course for reaching the point at which he aims, but the rocks are so extremely steep that much time would be lost in attempting to mount that way. Ascending by some projecting rocks that are covered with the rarest plants, he reaches a châlet (malga) in a little green basin, a short way below the highest ridge of the mountain. The *Monte Tombea* is probably about 6,800 ft. in height, and as it slightly overlooks the nearer summits it commands an extensive view, in which one ridge of Alps just overtops the nearer one, but minute local knowledge would be needed to distinguish accurately the details. The following are among the very interesting plants found on the mountain, most of them on rocks between 5,000 ft. and the top: *Ranunculus Bertolonii* (*crenatus?*), *Capsella pauciflora*, *Viola heterophylla*, *Silene Elizabethæ*, *Mœhringia glaucovirens*, *Saxifraga arachnoidea*, *Laserpitium nitidum*, *Scabiosa vestina*, *Rhaponticum scariosum*, *Gentiana utriculosa*, *Pœderota bonarota*, *Primula spectabilis*, *Daphne rupestris*, and *Sesleria microcephala* (?). In descending it would be easy to join the track from Val Bondone to Magasa, but the botanist will prefer to give some additional time to the examination of the southern face of the mountain.

On the E. side of the Tombea, the frontier between Tyrol and Lombardy is to some extent a natural boundary, as the streams flowing to Val di Ledro and Val Ampola are Tyrolese, and those running SE. towards the L. of Garda are given to Lombardy. The S. side of the Tombea, and the head of the Val Toscolano belong, however, to Tyrol. The Tyrolese portion of the valley is called *Val Vestino*. It is, for so secluded a district, very populous, com-

prising seven or eight villages, and a good deal of arable land, extending into several short branches or recesses in the mountains. In addition to several of the plants of the Tombea which descend into the head of the valley, there have been found here *Malabaila Hacquetii*, *Pedicularis acaulis*, and other rarities. Near the frontier, where the path enters Val Toscolano, is (?) the western limit of the pretty *Adenophora suaveolens*. Unlike Val Vestino, the *Val Toscolano* is almost uninhabited, but there are some small hamlets on the slopes of the mountains, reached by paths that diverge from the main valley. The scenery is pleasing, but not remarkable, except at the lower end, where the bold summit of Monte Pizzocolo has a fine effect. The path keeps most of the way to the l. bank, and the first view of the Lake of Garda is gained near Gaino. A path leads from that village through a considerable grove of fine laurel (or bay) trees, which are here used to produce an oil used for some manufacturing purposes.

Toscolano, with a rather humble, but not bad Inn, kept by Paolina, is described in § 57.

Travellers who wish to visit the Tombea and Val Vestino, without crossing the Italian frontier, may best go by Bondone, and return by Val Lorina to Storo. The Tombea may also be approached from Val di Ledro by a very agreeable but somewhat laborious route, in great part along the mountain ridge that here forms the frontier between Tyrol and Lombardy, passing over, or near to, the summit of Monte Tremalzo.

Route H.

PINZOLO TO RIVA, BY THE BOCCA DI BRENTA, AND MOLVENO.

In several of the preceding routes, reference has been made to a considerable mountain-mass, extending on the E. side of Val Rendena, for which the collective name *Brenta Alta* is here adopted. It is composed of a brittle dolomitic limestone (much less crystalline in texture than the true dolomite of the Venetian and Fassa Alps), which by exposure to the weather assumes various tints, from pale grey to rich pink and murky red. By its extraordinary boldness and singularity of form, this range fascinates all mountaineers who approach it, yet it is but very lately that it has been even partially explored. It may best be described as an irregular group of towers of rock, varying in height from 9,500 to nearly 11,000 ft., that rise out of a huge broken mass of limestone, which is penetrated in some directions by deep valleys and recesses. As a general rule, the towers are isolated, showing on one or more sides absolutely vertical faces of rock, and each is capped by a covering of névé. At the E. foot of the mountain is the picturesque *Lake of Molveno*, a spot strangely overlooked by travellers, but which, if in Switzerland, would doubtless be the frequented resort of tourists throughout the summer. The little village of Molveno, at the head of the lake, is connected with Pinzolo in Val Rendena by an extremely interesting pass — the Bocca di Brenta — whose name was strangely misapplied by the Austrian engineers to the highest summit of the mountain. The pass, with the valleys leading to it on either side, divide the Brenta Alta into two portions, of which the larger, including the highest peak, lies S. of the pass. The engineers engaged on the Austrian map have given the name Cima Tosa to the highest of the summits N. of the pass (10,324′ Austr. Eng.); whereas the name Tosa (signifying Jungfrau, or virgin) is unknown on the W. side of the mountain, and is universally applied on the Molveno side to the highest summit, misnamed on the Austrian map Bocca di Brenta.

The way from Pinzolo to Molveno lies through Val Nambino. The track to La Madonna di Campiglio is followed for some way beyond the chapel of St. Antonio (Route A), beyond which a rough cart-track has been carried to some sawmills standing opposite the opening of *Val Brenta*, 1¾ hr. from Pinzolo. After crossing the main torrent, the path mounts through the forest on the l. bank of the stream from Val Brenta, till it crosses to the opposite bank at the lower end of a level tract of meadow whereon stand some sheds. Thenceforward the way lies on the proper rt., or NE. side of the valley; unless a détour be made to reach a solitary *casera* standing on a high shelf above the steep barrier of rock that stretches across the glen. This is reached by a steep narrow track easily missed, that climbs the slope above the l. bank of the torrent, reaching the summit of the barrier just where it abuts against the mountain. Here, as in most of the châlets of the limestone Alps, the traveller may feast on milk and excellent butter. Above the rocky barrier the scenery assumes a wild and fantastic aspect, which recalls, without closely resembling, that of the better known Dolomite Alps. The stream alternately sinks into the ground and reappears further on, till it is finally lost to view, and the upper region of the mountain is absolutely devoid of water. Some way above the châlet the glen forks, and the true course is that lying to the l. as the traveller ascends. The glen becomes a mere cleft leading up to a long snow couloir, at the head of which is seen the

Bocca di Brenta (8,502′? J.B.), a true gateway, about 15 ft. wide, between two pinnacles of limestone. After a short descent over rough rocks, the way turns abruptly to the l. into the wild upland glen that leads down to the head of Val delle Seghe. In approaching the pass from the Molveno side, it is not seen until the traveller has come close below it. The much broader gap seen in front during the ascent on that side leads to the base of the Tosa, or highest peak of the mountain. For a considerable distance the way down the glen is very rough and trackless, though not at all steep, until the traveller reaches a pasture, and a hut locally called Malga dei Vitelli (about 6,550′). Henceforward a faintly marked track leads the traveller over rough ground, which becomes doubly intricate when brushwood begins to cover the surface, and conceal the numerous holes and chinks in the rocks. Before long he finds himself at a great height above the deep and narrow *Val delle Seghe*, through which lies the way to Molveno. The scenery here reaches the climax of fantastic beauty and strangeness. The pinnacles and towers of rock that rise above the lower belt of pine and beech forest rival each other in boldness of form, some actually overhanging their bases. A very rough descent, where local knowledge in the guide will save some trouble to the traveller, leads down to the bed of the valley, and the remainder of the way lies through the dense forest that still clothes its recesses, though the woodcutter's axe has begun to devastate it. The Val delle Seghe takes its name from the sawmills worked near the point where it opens on the Lake of Molveno. Turning to the l., a few minutes' walk leads in about 8 hrs. from Pinzolo to the small and poor village of

Molveno (3,050′?), standing on rising ground above the N. end of the lake, Rough but tolerable quarters are found at Giacomo's Osteria near the church. Fish from the lake, and a fowl may sometimes be had, but butcher's meat is not found in this remote place, which may at some not distant day be frequented by tourists. The charming little Lake of Molveno, rather more than 3 m. in length, and about 3,000 ft. above the sea-level, lies between the main mass of the Brenta Alta and the ridge of *Monte Gazza* (about 6,500′), which

divides the valley of Molveno from the Adige and the road from Vezzano to Trento.

[From Molveno an agreeable path leads along the Bior torrent to *Andolo*, a hamlet near a little lake, and then, over a low pass. into *Val Sporreggio*, a tributary of Val di Non (§ 37, Rte. B). The valley contains two ruined castles of the Spaur family (who derive their origin and their name from hence), and the villages Spor Maggiore and Spor Minore, the first on the rt., the second on the l. bank of the torrent. The Val di Non is entered at the defile of Rocchetta. This path offers a convenient and agreeable way for the pedestrian bound for the Val di Non, who would avoid the hot valley of the Adige.]

There is a choice between three different ways connecting Molveno with Riva. In approaching the lake from Riva or Trent the most interesting way in clear weather is to cross the ridge of Monte Gazza from Vezzano. It is a broad-topped rounded ridge, nearly bare of timber on both sides, and the walk is uninteresting until, on approaching the verge of the steep western face, the exquisitely blue lake is seen at a great depth below, backed by the grand crags and towers of the Brenta Alta, whose topography can be studied better from hence than from any other point of view. The shortest track down the steep face of the ridge leading to Molveno is easily missed without a local guide. In going from Molveno the most agreeable way is that by Ranzo. A cart-track for the conveyance of timber is carried along the W. bank of the lake, but to enjoy the scenery the traveller should either follow the much rougher and little-used path above the E. shore, or hire a boat at Molveno. On reaching the southern end, he will be surprised to find that no stream issues from the lake. There is probably none other in the Alps of nearly equal dimensions that is drained altogether by subterranean channels. Whether, as the writer supposed on a first visit, the original course of the stream has been covered over by a great berg-fall, is somewhat uncertain. After crossing a level stony tract, where a spring of deliciously cold water bursts out in one place near the path, the verge of the short glen running down to the valley of the Sarca is attained. The first houses are at a spot called Le Mulina, where the stream from the lake bursts out from a cleft in the mountain and turns several mills. In going to Ranzo, the traveller does not descend to Le Mulina, but bears to the left, and follows a track along the slope of the mountain, till he approaches the point where it forms a sharp angle overlooking the deep defile through which the Sarca descends to Le Sarche. In following the road from that place to Tione (Rte. D), and viewing the precipitous face of the mountain that almost overhangs the defile, a nearly horizontal ledge—in appearance a mere line—is seen to traverse the rocks. This ledge affords a perfectly easy and safe path, two or three ft. in width, which leads to the village of *Ranzo*, standing on the summit of a steep and lofty promontory that on one side overlooks the defile of the Sarca, and on the other the Lake of Toblino. A path leads thence down to Castel Toblino on the latter lake, described in Chap. xvi.

A course to Le Sarche, rather shorter than that by Ranzo, is to descend to Le Mulina. The torrent flows from thence to join the Sarca in the impassable defile above referred to; but by keeping a track above the rt. bank, for some way nearly at a level, there is no difficulty in descending to a plank bridge just above the defile, by which the Tione road is reached about 3 m. above Le Sarche.

The first ascent of *La Tosa*, or highest peak of the Brenta Alta, was made in 1865 by Mr. W. E. Forster and the writer, with a young man named Matteo Nicolosi of Molveno, who is a good cragsman and has minute local knowledge of some parts of the mountain, but has no mountaineering instinct, and is ut-

terly unaccustomed to ice-work. About 1 m. S. of the opening of Val delle Seghe is a deep recess running into the central part of the Brenta range. There is a herdsman's hut, or *casera*, on a shelf of rock near the head of this recess. This may be reached by a cattle track that ascends over much rough ground from the level of the lake, but it is a rather shorter course to mount at first to a large casera, seen from Molveno, that stands on a shoulder of the mountain about 1600 ft. above the lake, and then to ascend gradually in a slanting direction till you reach a slope of débris running up along the base of a range of vertical rocks, at no great distance from the first-named casera. After climbing a steep rocky slope, immediately above the casera, it is necessary to keep towards a gap on the rt. of a projecting rock, avoiding a faintly marked sheep track that here bears to the l. On reaching the gap the traveller is on the verge of a deep rocky hollow, which would contain a lake if the rock were not everywhere pierced by internal fissures. The way is over very rough ground to the l. of the hollow, and then up bare slopes of rock whose rifts are full of snow. During the ascent the Tosa is full in view. On this side it appears more massive and less tower-like than from other points of view. At its base are two glaciers. The smaller one on the N. side might be reached by either of two gaps, leading very close to the summit of the Bocca di Brenta; but the highest point lies a good way S., and rises immediately above the larger glacier lying at the E. base of the peak. As seen by the writer, the nearly perpendicular wall of rock guarding the base of the peak is quite unbroken, but there are some places where the vertical part does not rise more than 100 or 150 feet above the edge of the glacier. At such a spot a narrow cleft or chimney was found, by which the steepest part of the ascent was surmounted, and the remainder of the way was not difficult. The earlier measurements of this peak were much under the truth. The yet unpublished Government Survey of Tyrol attributes to it the height 10,771 ft., but the writer is persuaded that even this is somewhat short of the truth. His observations give for the summit a height of at least 7,800 above Molveno, or not less than 10,850 ft. above the sea. In any case it ranks beside the Primiero peaks, leaving to the Marmolata its pre-eminence among the limestone summits of the Eastern Alps.

The second ascent was made by Mr. Tuckett in 1867, with Melchior Anderegg and Bonifazio Nicolosi. He reports favourably of the latter, whose elder brother, Matteo, is gone to live in Botzen. Mr. Tuckett ascertained that the true Cima Tosa surpasses the second peak of this group (Cima Tosa of Austrian map), called by B. Nicolosi Cima di Mezzodì, by not more than 100 ft.

Granite Porphyry — G P

Hornblende — A

Gneiss — Gn

Palæozoic & Metamorphic — M

Serpentine — S

Carboniferous — C

Verrucano — V

Triassic — T

Jurassic — J

Cretaceous — Cr

Eocene — E

Miocene — m

MAP OF THE CENTRAL ALPS

Including

SWITZERLAND.

LOMBARDY.

and the

WESTERN TYROL.

English Miles.

0 5 10 15 20

Edwd Weller F R G S

INDICES.

PAGE

INDEX TO THE PEAKS OR MOUNTAINS 493

INDEX TO THE ALPINE PASSES 499

GENERAL INDEX 503

INDEX

TO

THE PEAKS OR MOUNTAINS.

ABE

ABENDBERG, the, 59
Adamello (11,667′), 477
Æggischhorn (9,649′), 85, 103, 106, 125
Aela, Piz d' (10,893′), 367
Agassizhorn (12,960′). 112
Agnone, Pizzo d' (8,513′), 336
Albeno, Monte (6,706′), 449
Albristhorn (9,078′), 51
Albrunhorn (9,515′), 252
Aletschorn (3,803′), 94
Almerhorn (13,281′), 110
Alpenorenstock (7,982′), 198
Alpstein (9,347′), 360
Altels, the, (11,923′), 37
Alvier (7,754′), 230
Alzasca, Pizzo d' (7,418′), 315
Amertenhorn (8,727′). 48
Angelus Spitze (10,982′), 420, 434
Aralata (6,585′), 450
Arbelhorn (9,980′), 16
Arblasch, Piz d' (10,512′), 368
Arera, Monte (8,255′), 449
Auberg, Gross (5,583′), 183
Augstmattenhorn (6,929′), 60
Augstenberg (7,801′), 208, 355
Augstenberg (10,443′), 363
Aul, Piz (10,250′), 296
Ault, Piz (9,951′), 216
Axenberg, the (6,830′), 156
Ay Tour d' (7,818′), 9, 22
Azzarini, Monte (7,976′), 451

BACHTEL (3,671′), 204
Balmhorn (12,100′), 37
Balniscio, Cima di (9,967′), 336
Bardan, Cima di (9,387′), 336
Bärenhorn (9,619′) 295, 300
Basodine (10,748′) 312, 314
Bauen, Nieder (6,323′), 156
—— Ober, (6,964′), 156
Beckistock (8,491′), 198
Berglistock, the, 119
Bernina, Piz (13,294′), 396
Berra, La, 26
Beverin, Piz (9,843′), 283
Biberlikopf, the, 205
Bietschhorn (12,969′), 103
Biferten Stock (10,778′), 222
Bisbino, Monte (4,416′), 329
Blackenstock (9,685′), 175
Bläsi, Corno di (10,000′), 382
Blaskopf, the (4,743′), 242
Blauberg (9,848′), 266

CEV

Blinnenhorn (10,932′), 248
Blume, the (5,223′), 64
Blümlisalphorn (12,041′). 43
Blümlisalpstock (10,564′), 43
Blumone, Monte (9,321′), 460
Bobio, Monte, 454
Bocktenhorn (10,038′), 377
Bonder Grat, 52
Bortelhorn (10,482′), 255
Bramegg (3,645′), 128
Branleire, Dent de (7,743′), 11
Braulio, Monte (9,790′), 422
Breithorn (12,382′), 99
Brenta Alta, (10,771 ?) 471, 486
Brienzer Rothhorn (7,917′), 62
Brigelser Horn, or Piz Tumbif (10,555′), 185, 221
Brisen, Hoch (7,895′), 176
Bristenstock (10,089′), 270
Brodelhorn (9,187′), 248
Bromberg, the (8,675′), 113
Bronzone, Monte (4,446′), 461
Bruschghorn (10,020′), 303
Buin, Piz (10,916′), 358. 362
Bündner Tödi, or Piz Frisal, 222
Buochserhorn (5,936′). 177
Bürgenstein, the (4,077′), 154
Busazza (10,903′). 477
Büttlassen (10,463′), 42

CADELLE, Monte (8,301′), 451
Cadini, Punta (11,425), 419
Calanda (9,213′), 185, 210
Camadra, Cima (10,509′), 276, 298
Cambrena Piz (11,835′), 395
Cambrial Piz, 221
Camoghè, Monte (7,304′), 333
Campaccio, Pizzo (8,544′), 413
Campione (7,158′), 454
Campo, Corno di, 415
Canciano, Pizzo (10.194′), 411
Canzo, Corno di (4 508′), 345
Caprino, Monte, 335
Capütschin (11,132′), 397
Carasso, Monte (5,649′), 305
Carè Alto (11,352′). 472
Caren, Monte (6,406′), 465
Casana, Piz (10,079′). 415
Catscharauls (10,049′), 198, 221
Cavallo, Monte (7,671′), 451
Cavardiras, Piz, 221
Cavel, Piz (9,658′), 293, 296
Cavento, Corno di (10,994′), 479
Cevedale, Monte (12,505′), 419, 431

CHA

Chalchang (10,348′), 394
Chamossaire (6,932′), 10
Chasseral (5,279′), 6
Chaumont (3,845′), 6
Chausey, Pic de (7,799′), 9
Chiampatsch, Piz (9,580′), 392
Churfirsten, the, 205
Cistella, Monte (9,439′), 257
Ciumbraida, Piz (10,246′), 422, 443
Clara, Pizzo di (8,917′), 279
Claridenstock (10,709′), 178, 198
Confinale, Monte (11,076′), 420, 426
Confine, Corni del, 476
Cornicella (9,223′), 399
Corvatsch, Piz (11,345′), 397
Costainas, Piz (9,865′), 425
Cotschen, Piz, or Tgietschen (10,925′), 184, 216
Cotschen, Piz (9,938′), 363
Cramalina (7,520′), 315
Crana, Pioda di (7,959′), 317
Crap Alv (9 784′), 216
Cravè, Piz (9,282′), 285, 292
Cray, Le (6,795′), 20
Cretabessa, the, 18
Crispalt, the, 184
Cristallina, Piz (10,344′), 216, 276
Cristallo, Monte (11,370′), 420
Cristiannes (10,236′), 446
Cristillina (9,547′), 313
Crocione, Monte, 327
Cry, Haut de (9,698′), 14
Cucarné, Piz (8,924′), 368
Culand, Rochers de, 10
Curciusa, Pizzo di (9,422′), 336
Curvèr, Piz (9,761′), 283

DAUBENHORN (9,449′), 37
Diablerets (10,666′), 3, 10, 15
Diavolo, Crozzon del (9,956′), 477
Diavolo, Pizzo del (9,574′), 402
Diechterhorn (10,583′), 79
Disgrazia, Monte della (12,074′), 408
Doldenhorn (11,965′), 35
Doldenhorn, Klein (11,443′), 35
Dosdè, Corno di (10,597′), 416
Dreieckhorn (12,540′), 87
Drusenfluh (9,298′), 235, 360
Duana, Pizzo della (10,279′), 381
Ducan, Hoch (10,082′), 370, 378
Durin, Corno di (7,156′), 324
Düssistock (10,701′), 198

EBNEFLUH, the (13,005′), 99
Eggen Spitze (11,263′), 435, 439
Eiger, the (13,045′), 72
Einshorn (9,649′), 283, 284
Eisenhorn (9,816′), 357
Emet, Piz d' (10,502′), 320, 382
Engelberger Rothstock (9,251′), 176
Engeln, Drei (6,497′), 182
Erbserstock, 229
Err, Piz d', 367
Erzegg (9,336′), 134
Escherhorn (10,105′), 114
Esel (6,962′), 150
Esen, Piz d', (10,269′), 392
Etzel, the, 173

FALKNISS, the (8,338′), 354
Fanellahorn (10,243′), 299, 300
Fastchalv, Piz (10,430′), 363

GRO

Faulfirst (7,916′), 230
Faulhorn (8,799′), 70
Ferro, Sasso del (3,556′), 307
Fibbia, La (8,996′), 266
Finsteraarhorn (14,026′), 89
Fiorera (9,584′), 314
Fiori, Monte Campo dei (4,085′), 343
Fläscherberg (3,104′), 354
Flatschberg (10,673′) 419
Fliegenspitze (5,610′), 243
Flix, Cima da, 367
Fluchthorn (11,142′), 353
Fluela Weisshorn (10,135′), 376
Fluh, Mittel (8,441′), 361
Foletto, Monte (11,169′), 479
Foppenhorn (10,371′), 368, 381
Forbisch, Piz (10,689′), 308
Formico, Pizzo (5,171′), 449
Fornaccia (12,038′), 419
Forun, Piz (10,010′), 370
Frau, Wilde (10,702′), 42, 43
Frerone, Monte (8,676′), 460
Freudenberg (2,871′), 232
Frisal, Piz, or Bündner Tödi, 222
Frohnalpstock (5,787′), (§ 26, Rte. A.), 156
Frohnalpstock (6,982′), (§ 27, Rte. A.), 189
Fröhlichsegg, 232
Frunthorn (9,954′), 297
Fundelhorn (7,871′), 351
Fumo, Monte (10,682), 477
Furkahorn, 272

GÄBRIS (4,119′), 236
Gadmenfluh, the (9,155′), 135
Galbiga, Monte (5,600′), 327
Galenstock (11,956′), 140, 272
Gallegione, Pizzo (10,285′), 383
Gallinario, Pizzo (10.387′), 293
Galmi, Hinter (11,595′), 125
Gamstock, the (8,081′), 40
Gangella, Cima di (9,229′), 286
Ganneretsch, Piz (9,984′), 217
Gazza, Monte (about 6,500′), 487
Geissbützistock, 198
Gelbhorn (9,958′), 303
Gemistock (7,967′), 192, 198
Gemschfayrstock (9,733′) 191, 198
Generoso, Monte (5,561′), 340
Genova, Dosson di (10,890′), 477
Ghiaje, Cima delle (9,880), 471
Ghiridone, Monte (7,165′), 306
Gisifluh (2,539′), 157
Giswylerstock (6,075′), 132
Giuf, Piz (10,164′), 184, 217, 220
Giumella (11,650′), 419
Giumels, Piz (9.623′), 36
Gleno, Monte, 463
Glarnisch, the, 179
—— Hinter (9,584′), 180
—— Mittel (9,557′), 180
—— Vorder (7,647′), 181, 189
Gletscherhorn (9,629′), 48, 99
Gletscherhorn (10,190′), 37
Gonzen, the (6,014′), 235
Granate, Corno delle (10,171′), 459
Grauehörner, the, 228
Grauhorn (9,849′), 286, 303
Grauspitz (8,648′), 360
Griatschouls, Piz (9,754′), 390
Gribellekopf (9,508′), 364
Grigna (7,908′), 454, 455
Groppera, Pizzo (9,626′), 383

Grosshorn (12,346′), 99
Grünberg, the (10,361′), 113, 128
Grunerhorn (11,542′), 114
Grünhorn (10,784′), 90
Grünhorn Lücke (10,843′), 90
Grüsch, Piz, 185
Gspalterhorn (11,260′), 42
Guferhorn (11,132′), 299
Güggistrat, the (7,035′), 60
Guglielmo, Monte (6,274′), 462
Gulmen (5,873′), 243
Gummfluh, the (8,068′), 20
Gurnigel, Hoch (5,066′), 26
Güz, Piz (11,066′), 386
Gyrenspitz, the, 238

HACKEN, the (4,570′), 172
Hahnenschritthorn (9,319′), 17
Hasenmatt, the (4,754′), 30
Hasenohr (10,673′), 419, 431, 439
Hausstock, the, 105
Heinzenberg, the (about 7,000′), 302
Helgiohorn (9,302′), 251
Hirzli (5,372′), 188
Hochofenwand, 434
Hochwacht (2,887′), 161, 186
Hockenhorn (10,817′), 45
Hohe Kasten (5,902′), 239
Hohgant, the (7,216′), 60
Hohsandhorn, (10,515′), 253
Hölzihorn (9,810′), 252
Hornfluh, the (6,408′), 20
Hühnerthälistock, the (10,607′), 81
Hunnenfluh, the, 76

JAMAN, Dent de (6,165′), 12, 23
Jätzstock, the, 223
Juchli, the (7,131′), 134
Juchlistock, the (8,633′), 81
Jungfrau, the (13,761′), 74, 91

KAIEN, the (3.668′), 236
Kaiseregg, the (7,188′), 26
Kaiserstuhl (7,674′), (§ 26. Rte. G.) 176
Kaiserstuhl (8,259′), (§ 26, Rte. L.), 182
Kalteberg (9,505′), 251
Kammerstock (7,029′), 191
Kammlistock (10,699′), 198
Kamorspitze (5,748′), 239
Kärpfstock (9,179′), 225, 228
Kastelhorn (10,246′), 314
Kesch, Piz (11,211′), 371
Kirchelispitz (8,498′), 360
Kistenstock, the, 222
Klimsenhorn (6,555′), 150
Kompatsch (11,065′), 434
Konen-Spitze (11,005′), 419
Königsspitze (12,646′), 420, 431
Krachenhorn (9,495′), 378
Krätzernwald, 241
Kreuz (7,218′), 356
Kreuzlistock, 220
Kriegalpstock, 254
Kronberg (5,381′), 237
Kühalpthalhorn (10,125′), 378
Kuhbodenhorn (10,082′), 273

LAASER SPITZE (10,827′) 420
Lagalp, Piz (9,718′), 413

Lago, Cima del (9,892′). 382
Lago Scuro, Corno del (10,373), 476
Lago Spalmo, Corno di, 416
Languard, Piz (10,715′), 394
Largo, Cima del (11,162′), 408
Laris, Crozzon di (10,899′), 477, 480
Laubergrat (7,352′), 132
Lauchenspitz (7,753′), 440
Laufbodenhorn (8,901′), 48
Laurasca, Cima di (7,264′). 318
Legnone, Monte (8,568′), 457
Leiterberg, the, 229
Lenzerhorn (9,544′), 366
Limidario, Monte (7,165′), 306
Linard, Piz (11,208′), 358
Litzner, Gross (10,250′), 353
Lobbia Alta (10,578′), 477. Bassa (9,696′), 477
Löchliberg (9,990′), 303
Löffelhorn (10,138′), 81, 83
Lumbreda, Pizzo della (9,768′), 284
Lun, Piz (4,165′), 208
Lungen, Piz (10,400′), 379
Lunghino, Pizzo (9,121′), 379

MADARO, Pizzo di (8,366′), 315
Madatsch-Spitze, (11,244), 420, 423
Mädrishorn (9,344′), 361
Madritsch-Spitze, 436
Mageren (8,294′), 206, 229
Magno, Pizzo (7,877′), 278
Mährenhorn (9,839′), 143
Mainghorn (9,679′), 40
Maipitschspitz (10,374′), 446
Mandrou Alto, Monte (10,904′?), 476
Marchenspitze (8,816′), 314
Marchhorn (9,722′), 251
Marcio (9,533′), 381
Mare, Pallon della (12,038′), 426
Margna, Piz (10,355′), 389
Marrone, Pizzo
Marschollhorn (9,521′), 285
Masuccio, Monte (9,252′), 403
Mattstock (6,400′), 243
Mayen, Tour de (7,622′), 9, 22
Mayenfelder Furka (8,022′), 373, 37
Meggenhorn, 150
Mendola, the, 441
Menone, Pizzo (7,372′), 339
Merdasson, Dent de (6,132′), 22
Merzenbachschien (10,532′), 248
Mettenberg (10,443′), 67
Miezdi, Piz (9,258′), 213, 293
Mintschun (10,076′), 363, 392
Mittaghorn (12,761′), 99
Mittelhorn (12,106′), 120
Moine, Tête du (7,713′), 11
Moléson, the (6,578′), 22
Mönch (13,438′), 112. Schwarz (8,675′), 72
Morcles, Dent de (9,639′), 3, 12
Morgenhorn (11,733′), 43
Morra, La (9,656′), 213
Morteratsch, Piz (12,316′), 397
Mottasio, Dosso (9,879′), 336
Moveran, Grand (10.043′), 3, 12
Muccia, Pizzo di (9,721′), 285, 292
Münshuns, Piz (9,751′), 425
Mundaun, Piz (6,775′), 213, 295
Munteratsch (11,106′), 368
Muottas (8.273′), 390
Muraun, Piz (9,511′), 215
Murterol, Piz (10,423′), 443
Mürtschenstock, the, 189

Mutthorn (9,957′), 99
Mutthorn (10,181′), 272
Muttler (10,824′), 363, 393
Mythen, the (6,244′), 170

NAGLER Spitze (10,687′), 420
Nair, Piz (10,040′), 388
Napf, the, 128
Nardis, Cima di (11,688′),471
Naye, Dent de (6,693′), 22, 23
Ner, Piz (10,072′), 214
Nesthorn, Gross (12,533′), 94
Niesen, the (7,763′), 33
Nudo, Monte (3,635′), 343
Numa, Piz (10,263′), 391
Nurschallas, Piz, 219

OBERAARHORN (11,923′), 114, 125
Oberalpstock, 184
Ochsenstock, 195
Oeschinen Rothhorn (10,827′), 43
Oeschinenhorn (11,457′), 43
Ofen, the, 185
Ofenhorn (10,728′), 252
Ofenwand (11,558′), 420
Oldenhorn (10,250′), 3, 11, 15
Olmenhorn (10,853′), 87
Orgelspitze, 435
Oro, Monte d' (10,545′), 411
Orteler Spitze (12,814′), 420, 424
Ot, Piz (10,660′), 390

PADELLA, Piz (9,459′), 390
Palle della Mare (11,920′), 419
Pallon della Mare (12,038′), 419
Palü, Piz (12,835′), 396
Palü, Pizzo della (10,724′), 382
Pederspitze, Mittlere (11,349′), 420, 434
Pederspitze, Innere (10,768′), 420, 437
Pers, Mont (10,532′), 395
Pesciora, Pizzo (10,246′), 273
Pfannenstiel (2,633′), 186
Pilatus (7,290′), 150
Pioda, Pizzo (8,727′), 314
Pisoch, Piz (10,427′), 392
Platta, Piz (11,109′), 368, 381
Plattenberg (10,253′), 226, 300
Plattenhorner, 357
Plessura, Monte (9,941′), 423
Porcellizzo, Pizzo (10,092′), 406
Prata, Pizzo di (8,663′), 321
Praz, Le, 20
Presanella, the (11,682′), 471
Presolana, Monte (8,202′), 462
Puzata, Piz (10,262′), 216, 276

QUADRO, Pizzo del (9,925′), 286
Quatervals, Piz (10,358′), 390

RADERTENSTOCK (7,530′), 183
Radolfshoen (8,597′), 140
Ralligstock, the, 64
Rancio, Sasso (5,478′), 325
Randen, Hoh (3,008′), 203
Rantispitz, the (7,494′), 181, 189
Ravescha, Piz (9,875′), 219, 274
Redorda, Corona di (9,214′), 306
Redorta, Monte (9,980′), 459
Regina, Piz (9,436), 296

Regina Pizzo (4,885′) 459
Reidelstock (9,192′), 180, 190
Resegone, Monte (6,155′), 459
Rhætikon, the, 349
Rienzerstock (9,777′), 184, 262
Rigi, the (5,905′), 160, 161, 162, 163
Rigi Kulm (5,905′), 162, 167
Rigi Staffel (5,210′), 162, 164
Rigi Rothstock (5,545′), 162, 166
Rigi Scheidegg (5406′), 163, 165
Rinderhorn (11,372′), 37
Ringelspitz (10,660′), 185
Rizlihorn (10,744′), 81, 143
Roccabella (8,940′), 368
Rocchetta, Cima delle (10,777′), 471
Roen, Monte (6,919′), 442
Rondadura (9,902′), 276
Roseg, Piz (12,936′), 397
Rosenhorn (12,107′), 120
Rossa, Cima (9,886′), 253
Rossberg, 169
Rosso Fil (10,066′), 279, 292
Rossthäli (9,629′), 358
Röthe, the, 195
Rothhorn (11,644′), 91, 126
Rothhorn, Faldum (9,311′), 46
Rothhorn, Ferden (10,253′), 46
Rothhorn, Oeschinen (10,827′), 43
Rothhorn, Parpaner (9,518′), 374
Rothhorn, Resti (9,761′), 40
Rothspitz, Hintere (10,344′), 419, 436
Rothstock, Engelberger (9,251′), 176
Rothstock, Uri (9,620′), 176
Rotondo, Pizzo (10,489′), (§ 30, Rte. C), 273
Rublihorn, the (7,569′), 20
Ruchi, Gross (10,295′), 176, 198
—— Klein, 198
Ruchi, the (10,226′), 222
Ruppen, 238
Russein, Piz, or Stockgron (11,411′), 184, 194

SAASHORN (9,977′), 273
St. Michael Piz (10,371′), 367
Saline (11,772′), 419, 427
Salvatore, Monte (3,051′), 334
San Giacomo, Cima di (10,752′), 477
San Gottardo, Sasso di (8,983′), 266
San Martino, Sasso di, 327
San Matteo, Punta di (11,921′), 419
San Primo, Monte (5,236′), 345
Sandgipfel, 194
Sandhubel (9,075′), 374
Sanetschhorn (9,679′), 16
Saoseo, Cima di (10,729′), 404
Sardonagebirg, 185
Sassalbo, Pizzo (2,377′), 404, 413
Sassberg (6,555), 190
Saurenstock (10,026′), 227
Scalino, Pizzo (10,925′), 411, 412
Scalotta, Piz (10,112′), 381
Scesa Plana (9,738′), 235
Schafberg (7,824′), 240
Scharte, Jainger, 431, 434
Scheibenstoll, the (7,556′), 244
Scheerhorn (10,814′), 178, 198
Scheibe, the (9,587′), 185
Scheibenstol, the (7,554′), 205
Scherboda, Piz (10,250′), 297
Scheuchzerhorn (11,463′), 114
Scheyenstock, the, 182
Schienberg, the (6,837′), 183
Schienhorn (12,638′), 94

SCH

Schienige Platte (7,493′), 60
Schilt (7,503′), 181
Schilt (9,462′), 362
Schilthorn (9,728′), 76
Schindler Spitze, 351
Schlossberg (10,263′), 261
Schlössli Kopf (7,313′), 185
Schneehorn, the (11,158′?), 113, 124
Schneidegg, Grosse (6,910′), 67
Schöneboden, the (3,523′), 173
Schöntauf-Spitze (10,893′), 420
Schöntauf-Spitze (10,893′), 436, 437
Schorren (5,638′), 130
Schreckhorn (13,394′), 116
Schreckhorn, Klein (11,473′), 70
Schreckhorn, Lesser (11,801′), 119
Schwarzhorn (10,656′), 358
Schwarzhorn (10,338′), 377
Schwarzhorn (9,507′), 67
Schweifen Grat, 252
Scopi, the (10,499′), 276
Sena, Pizzo di (10,099′), 413
Seesvenna, Piz (10,56′) ,416
Sefinen Furke (8,566′), 97
Segneshorn (10,870′), 224
Selbsanft, the (9,632′), 192
Sella, Piz (11,805′), 397
Sentis, the (8,215′), 237
Serrotini, Monte (9,616′), 460
Sidelhorn (9,449′), 80
Signina Stock (9,428′), 302
Signori, Corno dei Tre (10,912′), 419, 428
Signori, Pizzo dei Tre, 452
Silberhorn (12,106′), 72, 74
Silvretta Alps, 349
Simelihorn, 70
Six Madun, or Badus (9,616′), 219
Sobretta, Monte (about 11,000′), 428
Sol, Piz (9,340′), 208, 228
Sommerikopf the (4,517′), 240
Sonnenhorn (9,147′), 314
Sovrano, Cima di (10,040′), 382
Spalavera, Monte (6,822′), 318
Spamörter (10,492′), 261
Sparrenhorn (9,889′), 93
Spinale, Monte (8,198′), 470
Spitzälpeli, Hinter (9,842′) 98
Spitzälpeli, Vorder (9,596′), 198
Spitzhorn (7,224′), 99
Spitzliberg (11,214′), 138
Spitzmeilen, the (8,218′), 206
Spluga, Monte (9,351′), 405
Stallerberg (8,478′), 381
Stammerspitze (10,683′), 363
Starlera, Piz (10,060′), 380
Stätzerhorn (8,458′), 211, 366
Stazerhorn (6,332′), 133
Steghorn (10,332′), 37, 53
Steinhaushorn (10,350′), 143
Stella, Pizzo (10,2·6′), 382, 383
Stella, Corno (8,845′), 451
Stockgron (11,411′), 184, 219
Stockhorn (7,195′), 21
Stretta, Piz della (10,197′), 390
Stulsergrat (8,471′), 372
Studerhorn (11,916′), 126
Sulden-Spitze (11,109′),420, 434
Sulegg, the (7,910), 61, 95
Sulzfluh (9,324′), 235, 360
Surettahorn (9,971′ and 9,925′), 380
Surlei, Piz (10,456′), 394, 397
Sustenhorn (11,529′), 138
Suvretta Piz (10,085′), 398

VRE

TAMBOHORN (10,748′), 284
Taureau, Grand (4,350′), 4
Taviela, Pizzo (11,472′), 419
Tenca, Pizzo di Campo (10,096′), 310
Tendre, Mont (5,512′), 8
Teo, Pizzo di (10,007′), 404
Terre, Pizzo (10,165′), 284, 320
Terri, Piz (10,338′), 297
Tgietschen, or Piz Cotschen (10,925′), 184, 216
Tgietschen, Culm, 221
Thierberg, the (10,410′), 113
Thurwieser Spitze (11,962′), 420
Tiarms, Piz de (9,564′), 218
Tinzenhorn (10,276′), 367
Titlis (10,620′?), 135, 136
Todi, the (11,887′), 184, 194
Tödi, Klein (10,072′), 194, 221
Toma, Piz, 219
Tombea, Monte (about 6,800′), 485
Tomlishorn (6,997′), 150
Tonale, Monte (8,830′), 449
Torrenthorn (9,679′), 40
Torrone, Pizzo (10,827′), 408
Tosa, La, 488
Trafoier Spitze, 420
Tramenago, Pizzo di (11,842′), 419
Trême, Tour de, 12
Tremoggia, Piz (11,326′), 395
Tresero, Monte (about 11,800′), 419, 426
Trinserhorn (10,573′), 226
Trubinesca, Punta (11,106′), 406
Trugberg, the (12,904′), 88
Tschierva, Piz (11,713′), 397
Tschingel, Cima di (10,853′), 406
Tschingelhorn (11,746′), 100
Tumbif Piz, or Brigelserhorn (10,555′), 185, 222

UCELLO, Pizzo d' (8,911′), 285
Uertsch, Piz (10,738′), 371
Umbrail, Piz (9,954′), 422
Uomo, Pizzo dell' (9,022′), 276, 278
Uri Rothstock (9,620′), 176
Urlaun, Piz (11,063′), 214, 216
Ütliberg, the, 160

VADRED, Piz (10,6·0′), 376, 378
Vadret, Piz (10,184′), 363
Valrhein, Piz (11,148′), 291
Valserberg (8,225′), 301
Vaulion, Dent de (4,877′), 8
Venerocolo, Monte, 4·3
Venezia Spitze (11,095′), 419, 436, 438
Vent, Creux du (4,806′), 5
Verona, Pizzo di, 399
Vertrain-Spitze (11,371′), 420, 434
Vespolo, Pizzo (7,648′), 401
Vesulspitz (10,154′), 355
Vi, Culm da, 219
Video, Monte (11,361′), 420
Vial, Piz (10,387′), 293
Viescherhorn, Grosser (12,707′), 110
Viescherhörner, Walliser, 110
Vinei, Pizzo di (9,708′), 265
Vios, Monte (11,902′), 419, 427
Vitznauer Stock (4,750′), 154
Vogelfluh, the, 76
Vögelisegg, the, 238
Vorab, the, 185
Vreneliségärtli (9,534′), 189

WAL

WALLISER VIESCHERHORNER, the, 87
Wandfluh, the, 64
Wannehorn (12,195′), 88
Wasenhorn (10,628′), 255
Weissberg (9,987′), 380
Weissfluh (9,262′), 373
Weisse Frau (12,011′), 43
Weisshorn (9,882′), (§ 23, Rte. F), 48
Weisshorn (10,135′), (§ 34, Rte. D), 357
Weisshorn (8,701′), (§ 35, E), 375
Weisshorn, Fluela (10,135′), (§ 35, Rte. F), 376
Weissenstein, the, 30
Weitenalpstock (9,875′), 220
Weitsattel, the, 122
Wellhorn (10,486′), 66
Wetterhorn, 120
Wetterhörner, 120
Widderfeld, (6,747′), 150
Wiggis, the, 180
Wildhorn (10,722′), 17, 49
Wildstrubel, the (10,715′), 53

ZWÖ

Windgelle, Grosse (10,464′), 178, 198, 270
Windgelle, Kleine (9,847′), 198, 269
Windspillen, Wallis (6,522′), 19
Wissenstein (9,675′), 299
Wylerhorn (6,283′), 130

ZAPPORTHORN (10,499′, 288
Zebru, Kleine (12,251′), 420
Zeda, Monte (7,064′), 318
Ziegerpalfen, 424
Ziegerpalfen-Spitze, 420
Zigola, Croz di Val (10,059′), 477
Zinkenstock (9,087′), 113
Zocca, Monte di (10,565′), 408
Zucchero, Monte (8,980′), 308
Zufridspitze, (11,262′), 419, 430
Zugerberg (3,222′), 162
Zupo, Piz (13,120′), 397
Zutreibstock (8,687′), 192, 198
Zwölfihorn, the, 185

INDEX

TO

THE ALPINE PASSES.

AGASSIZ Joch, 112
Albrun Pass (8,005′), 252
Albula Pass (7,589), 371
Aprica Pass (4,052′), 463
Arlberg Pass (5,902′), 351

BALNISCIO, Passo di (7,715′), 336
Bardan, Passo (8,490′), 336
Bergli Joch, 124
Bernardino Pass, 284
Bernina Pass (7,658′), 413
Bilsberg Joch (9,360′), 439
Birchfluh Pass, 103
Boccareccio, Passo di, or Ritter Pass (8,858′), 254, 257
Bockmätteli, 183
Bondo, Passo di (about 10,000′), 407
Braga, Forcola di (8,435′), 404
Braulio, Passo di (8,242′), 422
Brenta, Bocca di (8,502′?), 487
Brünig Pass (3,648′), 130
Buffalora Pass (6,686′), 292
Busin, Col di, 253

CAINALLO Pass (about 4,000′), 455
Camedo, Passo di (7,028′), 337
Capütschin Pass (about 10,600′), 410
Casana Pass (8,832′), 418
Cavell Joch (7,562′), 293, 360
Cercen, Passo di (8,616′), 436
Cercen, Passo di (10,030′), (§ 40, Rte. A.), 471
Cevedale, Passo, 430
Chessalle-Eck (4,6[illegible]9′), 26
Cheville, Col de (6,680′), 14
Clariden Grat (about 9,800′), 198
Colonna, Col della, 318
Croce Domini Pass (about 6,500′), 465
Croix, Col de la (5,705′), 12
Cruschetta, La (7,599′), 446

DIAVOLEZZA Pass (9,670′), 396
Diavolo, Passo del (9,541′), 477
Dossrotond, Pass of (7,249′), 443
Drusenthor (7,822′), 360
Dündengrat (8,619′?), 42
Duron Pass, 482

EIGER Joch, 108
Engelberger Joch, 135
Eschia Pass (9,347′), 390

FALDUM Pass, 46
Ferden Pass, 40, 46
Fermunt Pass (9,206′), 362
Fex Forcla (10,112′), 397
Fimber Joch (8,547′), 363
Finsteraar Joch, 116
Fisiten Pass (6,728′), 191
Fluela Pass (7,891′), 376
Forcellina Pass (8,770′), 380, 381
Forcola, Passo della (7,274′), 316, 336
Forcolaccio, the, 314
Fornaccia, Passo della (11,500′?), 43
Forno, Passo del (11,041′), 427
Forno, Scatta del (8,291′), 315
Foscagno Pass (6,329′), 417
Furcletta, 444
Furka Pass (7,992′), 272
Furka, Grosse (7,546′), 360
Furka, Kleine, 360
Furka, Criner (7,631′), 314
Furtwang Pass (about 8,700′), 143
Futschöll Pass (9,078), 363, 391

GAMBRÉ, Passo di, 398
Gampadel Joch (?), 360
Gampen Pass, 441
Ganterisch Pass, 26
Garneira Joch (8,071′), 357, 361
Gatto, Passo del, 404
Gauli Pass, 124
Gavardina Pass, 484
Gavia Pass (about 8,600′), 463
Geisspfad Pass, or Col della Rossa (8,120′), 254
Gelten Pass (9,285′), 17
Gemmi Pass (7,553′), 37
Ghiacetto, Passo del Lago (about 9,437′), 476
Giumella, Passo di (6,955′), 292
Gramsen Joch, 436
Greina Pass (7,743′), 294
Grialetsch Pass, 376
Gribelle Joch, 364
Gries Pass, 248
Grimmi Pass (6,234′), 51
Grimsel Pass (7,103′), 81
Groppera, Passo, 383

HÖHE, Auf der (5,056′), 243
Hohenferner Joch (10,000′?), 437

JAM

JAMAN, Col de (4,872′) 22
Julier Pass (7,503′), 368
Jungfrau Joch (11,095′), 89, 108

KAMOR Pass, 239
Karrenegg Pass (5,249′), 183
Kirchberger Joch (8,134′), 439
Klausen Pass (6,437′), 178
Kinzig Kulm, 181
Kreuzli Pass, 219
Kriegalp Pass, 256

LAASERTHAL Joch, 434
Laasferner Joch, 434
Lago, Passo del, 382
Lämmeren Joch, 47
Langenferner Joch (10,765′), 430
Lares, Passo di (9,230′), 480
Laret Pass (5,338′), 373
Laucheren (5,883′), 12
Lauteraar Joch, 117
Lavaz Joch, 293
Laviner Joch (9,131′), 358
Lavirum Pass (9,249′), 390, 418
Lawinen Thor, 105
Lobbia Alta, Passo della (9,956′), 477
Lobbia Bassa, Passo della (9,541), 477
Löchliberg Pass (8,169′), 303
Lötschen Lücke (10,512′), 105
Lötschen Pass (8,796′), 44
Luckmanier Pass, 272, 276

MADESIMO, Passo di (7,480′), 383
Madris, Passo di Val (8,793′), 383
Madritsch Joch (10,252′), 436
Maggia, Bocchetta di Val (above 9,000′), 314
Maloya Pass (5,942 ?), 386
Mare, Passo della (11,148′), 432
Marocaro; Bochetta di, 476
Matsch Joch (10,750′?), 452
Mendelscharte (4,964′), 442
Mönch Joch, 109, 111
Montozzo, Passo di. 463
Mortirolo, Passo (6,053′), 404

NARRET, Passo di (8,013′), 311
Nera Pass (about 8,000′), 274
Nuefelgiu, Pass of, 258
Nufenen Pass (8,009), 273

OBERAAR Joch (10,264′), 80, 125
Oberalp Pass (6,732′), 218
Ofen Pass (7,070′), 445
Ofenwand Scharte, 434
Orsi, Col degli (10,847′), 427
Orteler Joch (11,000′?), 433

PASSETTI, Col dei (6,806′), 292
Pastori, Passo dei (above 9,000′), 443
Peder Joch, 434, 437
Peters Grat (about 10,550′), 102
Pertnauer Joch, the, 299
Philisma, Col de (5,010′), 11
Pillon, Col de, or Pillenberg (5,092′), 18
Plasseggen Pass (7,615′), 361
Plattenberg Pass (9,088′), 200
Plattenschlucht (9,314)′, 299
Pragel Pass (5,062′), 179
Prese na, Passo di (9,647′), 476

SUV

RAMIN Pass, 228
Rängg (2,323′), 132
Rawyl Pass (7,943′), 49
Redorea, Passo di (7,014′), 308
Renfer Joch, 125
Renggli Pass (5,774′), 95
Resti Pass, 46
Rieseten Pass (6,644′), 228
Ritter Pass (8,858′), 252
Rochette, Forcella di (about 9,000′), 407
Rossa, Col della, or Geisspfad Pass (8,120′), 254
Rossa, Passo della Vedretta (11,041′), 427
Rosso, Forcola di (8,819′), 404
Rothsattel, 127
Rovano, Passo (8,596′), 399
Russein Pass, 196

SACCO, Passo di (9,026), 404
Saënt Pass, 436
Saille, Frête de, 12
St. Antonier Joch (7,848′), 361
St. Gothard, Pass of, 265
Salatschigna Pass, 389
Salet Pass (9,565′), 393
Salto, Passo del, 449
Samina Joch (7,795′), 360
San Giacomo, Passo di, 250
Sand Grat Pass (9,138′). 221
Sanetsch Pass (7,369′). 16
San Jorio, Passo di (6,417′), 337
San Marco, Passo di (5,997′), 457
San Martino, Forcella di (8,957′), 408
San Valentino, Passo di (about 9,300′), 480
Sardasca Pass (?), 362
Sardona Pass, 227
Sassiglione, Forcola di (8,333′), 404
Sätteli Pass, 135
Sauren Joch, 227
Sausgrat Pass, 96
Scaradra Pass (9,088′), 300
Scerscen Pass (9,912′). 411
Scheidegg, Grosse (6,910′), (§ 24, Rte. B), 67
Scheidegg Pass (about 7,000′), (§ 28, Rte. L) 243
Scheidegg, Schwändi (4,698′), 183
Schlappiner Joch (7,185′), 356, 361
Schmadri Joch, 106
Schneidschur Pass (9,413′), 40, 46
Schonegg Pass (6,652′), 176
Schündli, Pass of the (5,610), 12
Schweizerthor (7,120′), 360
Segnes Pass (8,612′), 224
Sella Pass, 399
Septimer Pass (7,582′). 379
Sertig Pass (9,062′), 378
Sforzellino, Passo di (9,950′), 427
Spliigen Pass, 319
Strahleck Pass (10.994), 115
Stege Pass (6,057′), 302
Stein Joch, 139
Steinlimmi Pass, 142
Stelvio Pass (9,177′), 423
Sterla, Passo di Val (9,515′), 383
Storegg Pass, 134
Strela Pass (7,799′). 375
Stretta, Passo della (8,143′) 417
Strubeleck Pass, 47
Studer Joch, 126
Sulden Joch, 437
Surenen Pass (7,578′), 175
Surlei Forcla (9,042′), 397
Susten Pass, 138
Suvretta Pass (8,589′), 398

TIA

TIARMS, Passo da, 218
Tomils Pass (7,930′), 299
Tonal Pass (6,483′), 459
Topeti, Passo dei (9,126′), 477
Trafoier Joch (about 10,800′), 433
Tresculmene, Passo di (7,064′), 292
TrefUomini, Col dei, 292
Tr itlimmi, 141
Trona, Passo di, 453, 456
Trüttlisberg Pass (6,235′), 52
Tschingel Pass (9,252′), 101

UMBRAIL Pass (8,242′), 418, 430
Unteraar Joch, 127
Uomo, Passo dell' (7,257′), 278
Usciolo, L' (?), 448

ZUF

VALTENDRA, Col di, 257
Vereina Pass (8,133′), 357
Viescher Joch, 112
Vignitz Pass (8,855′), 364
Vignone. Passo di. 284
Viola, Passo di Val (about 7,900′), 415, 416
Vios, Passo di (10,868′), 427
Voralpstock, 262

WIDDERSTEINER Furke (6,608′ ?), 225
Wormser Joch (8,242′), 422

ZEBLES Pass (8,333′), 363
Zebru, Passo di (9,700′?), 433
Zeyneser Joch (6,162′), 353
Zocca, Passo di (8,957′), 408
Zufrid Joch (9,905′), 439

GENERAL INDEX.

AA

AA, the Engelberger, 173
Aa, river, 131
Aarau, 157
Aarburg, 31
Abläntschen, village of, 12
Abschwung, promontory of, 113
Acqua Fraggia, Lago di, 383
Acqua, Hospital all', 273
Adamello district (§ 40), 467
Adelboden, 47, 51, 53
Adula district (§ 31), 279
Æggischhorn, Lauterbrunnen to the (§ 24, Rte. H), 103
Æggischhorn, Grindelwald to the (§ 24, Rte. I), 106
Æggischhorn, Grimsel to the (§ 24, Rte. O), 125
Aerner, village of, 252
Æsch Alp, 178
Æschi, 34
Æschi, village of, 95
Ager, village of, 253
Agnelli, Val d', 368
Agno, river, 333
Agno, village of, 338
Agnolo, Val, 471
Agone, Val, 413
Aigle, 8
Airolo, 266
Airolo to Andermatt, by the Val Canaria (§ 30, Rte. E), 274
Airolo, Dissentis to, by the Passo dell' Uomo (§ 30, Rte. G), 278
Airolo, Formazza (Andermatten) to, by the Passo di San Giacomo § 29, Rte. B), 250
Airolo, Locarno to, by the Val Lavizzara (§ 32, Rte. C), 309
Airolo, Locarno to, by Val Bavona (§ 32, Rte. D), 311
Airolo, Obergestelen to, by the Nufenen Pass (§ 30, Rte. D), 273
Alanza Maggiore, village of, 439
Albaredo, 451
Albeuve, village of, 22
Albigna Glacier, 408
Albisbrunn, 161
Albula district (§ 35), 364
Aletsch Glacier, Mittler, or Aren, 84, 87; Ober, 93
Almenno, village of, 450
Alpnach, 131
Alpnacher See, 153
Alpthal, village of, 172
Alserio, Lake of, 345
Alt St. Johann, 240
Altanca, hamlet of, 278
Altdorf, town of, 156, 175
Altdorf, Cologne to, by Basle, Olten, and Lucerne (§ 26, Rte. A), 147
Altdorf, Stanzstad to, by Engelberg and the Surenen Pass (§ 26, Rte. F), 173

ARN

Altdorf, Stanz to, by Isenthal (§ 26, Rte. G), 175
Altdorf, Stanz to, by Beckenried and the Sonnenberg (§ 26, Rte. H), 176
Altdorf to Stachelberg, by the Klausen Pass (§ 26, Rte. I), 177
Altdorf, Muotta to (§ 26, Rte. L), 181
Altmatt, 172
Altstädten, 235
Altstädten, St. Gall to (§ 28, Rte. E), 238
Alvaschein, village of, 369
Alveneu, village of, 372
—— Baths of, 370
Alvier torrent, 351
Amblar, 442
Ambria, Val, 402, 440
Amden, village of, 205
Amerten Glacier, 48
Amolo, La Porta dell', 471
Ampola, Val, 483
Amsoldingen, 21, 33
Amsteg, Stachelberg to, by the Clariden Grat (§ 27, Rte. B), 197
Amsteg, Dissentis to (§ 27, Rte. E), 219
Amsteg, excursions from (§ 30, Rte. B), 269
Andeer, 283
Andeer to Casaccia, by the Aversthal (§ 35, Rte. K), 379
Andeer to Campo Dolcino, by the Aversthal (§ 35, Rte. M), 383
Andermatt, 218, 264
Andermatt, Dissentis to, by the Oberalp Pass (§ 27, Rte. D), 217
Andermatt, Airolo to, by the Val Canaria (§ 30, Rte. E), 274
Andermatten, hamlet of, 249
Andermatten, Locarno to, in Val Formazza (§ 32, Rte. E), 314
Andolo, hamlet of, 488
Anfo, Rocco d', castle of, 474
Anfo, village of, 474
Annone, Lago d', 346
Antabbia, Val, 312, 314
Antigorio, Val, 247, 250
Antognasco, Val, 402
Anzeindaz, 14
Appenzell, 236
Appenzell, Rorschach to (§ 28, Rte. D), 235
Arbaz, village of, 18
Arbedo, village of, 268
Arbois, 4
Ardetz, Galthür to, by the Futschöll Pass, 362
Ardetz, village of, 391
Aren, or Mittler Aletsch Glacier, 87
Areuethal, the, 284
Argegno, 328
Argegno to Porlezza, by the Val Intelvi (§ 33, Rte. H), 339
Arnen See, 18
Arnen Thal, 18
Arno, Lago d', 460, 479

ARN

Arno torrent, 473
Arona, 307
Arona, Bellinzona to, or Sesto Calende, by the Lago Maggiore (§ 32, Rte. A), 304
Arosa, hamlet of, 374
Arth, 164, 168
Arth to the Rigi, 164
Arvigo, 292
Ascona, Ronco d', 305
Ascona, village of, 306
Assa, Val, 393
Assina, Val, 344
Asso, village of, 345
Attinghausen, 175
Au, peninsula of, 186
Augio, 292
Augst, 29
Auta, Pont, 391
Auvernier, 5
Avalanches of the Jungfrau, 73
Avenches, town of, 25
Avençon, valley of the, 13
Avent, village of, 15
Averara, village of, 451
Averser Rhine, 379
Avigna Val, 446
Avio, Val di, 451
Ayent, hamlet of, 56

BAAR, village of, 161
Baceno, village of, 254
Bächli, 81
Bächli Glacier, 79
Baden, town of, 157
Badus, the, or Six Maduna, 219
Bagni, Val de', 406
Bagolino, village of, 465
Balbianello, promontory of, 328
Ballabio, hamlets of, 454
Ballino, 482
Balmwand, 178
Bänisegg, 69
Barbellino, Cascata del, 449
Barbellino, Val, 450
Barcuns, Val, 220
Bärenthal, the, 372
Bargis, glen of, or Bargias Thal, 212
Barone, Lago, 309
Basel or Basle, city of, 28
Basel, Klein, 148, 202
Basle to Lucerne, by Zurich (§ 26, Rte. B), 157
Basle to Dissentis, by Schaffhausen and Coire (§ 27, Rte. C), 202
Bätlis, 205
Bauen, hamlet of, 156
Bavona torrent, 310
Bavona, Val, 311
Beatenberg, village of, 60
Beatenhöhle, or cave of St. Beatus, 64
Beckenried, 155, 177
Bedole, 475
Bedole, Vedretta di, 475
Bedretto, Val, 266. — village of, 273
Bell Alp, the, 93
Bellaggio, village of, 325
Bellaggio to Erba, by Val Assina (§ 33, Rte. K), 344
Bellano, village, 330
Bellano, Lecco to, by Val Sassina (§ 38, Rte. E), 453
Bellano, Morbegno to, by Val Varrone (§ 38, Rte. G), 456

BLA

Bellegarde, Val de, 12
Bellerive, baths of, 29
Bellinzona, town of, 268
Bellinzona, Fluelen to, by the St. Gothard Pass (§ 30, Rte. A), 259
Bellinzona, Disentis to, by the Lukmanier Pass (§ 30, Rte. F), 274
Bellinzona, Coire to, by the Bernardino Pass (§ 31, Rte. A), 280
Bellinzona to Arona, or Sesto Calende, by the Lago Maggiore (§ 32, Rte. A), 304
Bellinzona to Como, by Lugano (§ 33, Rte. C), 333
Bellinzona, Gravedona to (§ 33, Rte. F), 337
Belviso, Val, 463
Berbenno, village of, 401
Bergamasque Alps (§ 38), 448
Bergamo, city of, 439
Bergamo to Tirano, by Val Seriana (§ 38, Rte. A), 439
Bergamo to Sondrio, by Val Brembana (§ 38, Rte. B), 450
Bergamo to Morbegno, by the Passo di San Marco (§ 38, Rte. C), 451
Bergamo to Breno in Val Camonica, by Lovere (§ 39, Rte. B), 461
Bergamo to Breno, by Clusone (§ 39, Rte. C), 462
Bergün, 340
Bernardo, St., village of, 435
Berne, city of, 31
Berne, Vevey to (§ 22, Rte. I), 23
Berne, Lausanne to (§ 22, Rte. K), 24
Berne to Lucerne, by the Entlebuch (§ 24, Rte. P), 127
Bernes torrent, 441
Bernese Oberland (§ 24), 54
Bernina district (§ 36), 383
Bernina, tour of the (§ 36, Rte. D), 398
Bernina Inn, 412
Berzona, village of, 315
Bever, Val, 398
Bevers, 390
Bevers to St. Moritz, by Val Bever (§ 36, Rte. C), 398
Bex, 12
Bex, Ormond Dessus to (§ 22, Rte. C), 12
Bex to Sion, by the Col de Cheville (§ 22, Rte. D), 13
Bianco, Lago, 413
Biandina, Val, 457
Bianzone, 403
Biasca, village of, 267, 278
Biberbruck, 172
Bienne, 30
Bifertenbach, the, 193
Biferten Glacier, 194
Bignasco, village of, 310
Bigorio, convent of, 335
Bildhaus, 235
Binn, village of, 252
Binne torrent, 251
Binnenthal, the, 251
Birmensdorf, village of, 158
Birs, valley of the, 29
Bisithal, 179, 182
Bisolo, Val di Sasso, 405
Bissone, 335
Bitto, Val del, 451, 453
Bivio, village of, 368
Bivio to Casaccia, by the Septimer Pass (§ 35, Rte. I), 378
Blacken Alp, châlets of, 175

BLE

Blegno, Val, 279
Bludenz, 351
Bludenz to Landeck, by Montafun and the Paznaunthal (§ 34, Rte. B), 352
Blumenstein, 26
Blümlis Alp, 43
Blümlis Alp Gletscher, 42
Boazze, 478
Bockischlund, 175
Bodengo, Val, 336
Bodio, 267
Boganggen Alp, 96
Bolladore, 404
Boltingen, village of, 21
Bonaduz, 214, 281
Bondasca, Val, 386
Bondasca Glacier, 407
Bondione, Val, 449
Bondione, village of, 451
Bondo, 396, 473
Bondo, Morbegno to, by the Passo di Bondo, 407
Bondoler, Val, 257
Bondone, 473, 474
Böningen, 60
Borlezza torrent, 462
Bormina, Val, 428
Bormio, town of, 404, 421
Bormio, Baths of, 421
Bormio, Colico to, by the Val Tellina (§ 36, Rte. E), 400
Bormio, Pontresina to (§ 36, Rte. L), 415
Bormio to the Engadine, by Val Livigno (§ 36, Rte. M), 417
—— to Scanfs by the Casana Pass, 418
—— to Ponte by the Lavirum Pass, 418
—— to Zernetz, 418
Bormio to Mals (§ 37, Rte. A), 420
Bormio to Trento, by Val Furva and Val di Sole (§ 37, Rte. B), 425
Bormio to Santa Maria (§ 37, Rte. K), 442
Borzago, Val di, 472
Bosco, Val di, 314
Böthenbach, village of, 130
Botzen, Cles to (§ 37, Rte. I), 441
Boudry, 7
Bovegno, village of, 466
Brandnerthal, the, 351
Branzi, village of, 450
Bregaglia, Val, Morbegno to the, by Val Masino (§ 36, Rte. F), 405
—— to Castasegna, by the Forcella di Rochette, 405
—— to Bondo, by the Passo di Bondo, 407
—— to Vico Soprano, by the Passo di Zocca, 407
Bregalga, Val, 381
Bregenz, town of, 350
Bregenz to Landeck, by Feldkirch and the Arlberg Pass (§ 34, Rte. A), 350
Breguzzo, Val, 473
Breitlauenen Glacier, 98
Breithorn Glacier, 98
Brenno river, 277
Breno, 460
Breno in Val Camonica, Bergamo to, by Lovere (§ 39, Rte. B), 461
Breno, Bergamo to, by Clusone (§ 39, Rte. C), 462
Breno to Lodrone, by the Croce Domini Pass (§ 39, Rte. G), 465
Brenta, Val, 487
Brenzio, village of, 325
Brescia, city of, 461

CAM

Brescia, Malè in Val di Sole to, by the Tonale Pass and Val Camonica (§ 39, Rte. A), 459
Brescia to Lodrone, by Val Trompia (§ 39, Rte. I), 466
Brescia to Vestone in Val Sabbia (§ 39, Rte. K), 467
Breva or south wind, 323
Brianza, district of, 344
Brieg, 84
Brieg, Viesch to, by the Æggischhorn and Bell Alp (§ 24, Rte D), 84
Brieg, Meyringen to, by the Grimsel (§ 24, Rte. C), 76
Brienz, 61, 370
Brienz, Thun to, by carriage-road, 63
—— by foot-path, 64
Brienz or Meyringen to Lucerne, by the Brunig (§ 25, Rte. A), 130
Brigels, village of, 222
Brissago, village of, 306
Bristen, village of, 220
Brolla, Ponte, 309
Bruderbalm, 165
Brugg, village of, 157
Bruggen, 232
Brugnasco, hamlet of, 278
Brühlbach torrent, 237, 243
Brüllisau, village of, 243
Bründlen Alp, 152
Brunnen, Sieben, 49, 52
Brunnen, 155
Brunnen, Lucerne to (§ 26, Rte. C), 168
Brunnigletscher, 221
Brunnithal, the, 178
Brusio, 414
Bubikon, 204
Buchs, 235
Buffalora, cascade of, 287
Bühler, 236
Bulle, town of, 19
Bulle, Ormond Dessus to (§ 22, Rte. B), 11
Bulle to Thun (§ 22, Rte. L), 26
Buntschi torrent, 21
Buochs, village of, 155, 176
Buochser See, 153
Buono, Pieve di, village of, 473
Buotsch, Val del, 444
Burgdorf, 31
Burgdorf, Interlaken to, by the Emmenthal (§ 21, Rte. Q), 128
Burghalden, 186
Burglauenen, 71
Bürglen, 177
Burvein, hamlet of, 367
Bussigny, 8
Buzatsch, Val, 297

CABIONE, Val, 308
Cadagna, Lago di, 278
Cadenabbia, 326
Cadelini, Val, 276
Caf, Lago di, 479
Cajolo, village of, 401, 451
Calanca, Val, 292
Calcaccia, waterfall of, 266
Calende, Sesto, 308
Calende, Sesto, Bellinzona to (§ 32, Rte. A), 304
Caleppio, Val, 461
Calfaro, valley of the, 465
Calneggia, Val, 312
Camadra, Val, 294
Cambrena Glacier, 414

CAM

Cambrembo, village of, 451
Camonica, Val, district (§ 39), 458
Camperio, 277
Campfèr, hamlet of, 388
Campiglio, La Madonna di, 470
Campione, 340
Campo, 294
Campo, Val di, 415
Campocologno, 414
Campovasto, 390
Campsat, 380
Canaria, Val, 274
Canicül, village of, 380
Cannero, village of, 306
Canobbina, Val, 215
Canobbio, village of, 306
Canobbio to Domo d'Ossola, by Val Canobbina (§ 32, Rte. I), 317
Cantoniera, 320
Canzo, 345
Capolago, 335
Carassina, Val, 300
Carnusa torrent, 302
Caronella, Val, 403, 450
Carrera, 212
Casaccia, Val, 276
Casaccia, village of, 386
Casaccia, Bivio to, by the Septimer Pass (§ 35, Rte. I), 378
Casaccia, Andeer to, by the Aversthal (§ 35, Rte. K), 379
Casaccia to Sondrio, by the Muretto Pass (§ 36, Rte. G), 409
Casaco, village of, 341
Casana, Val, 418
Castasegna (2,362′), 385
Castasegna, Morbegno to, by the Forcella di Rochette, 405
Castiglione, village of, 340
Castione, village of, 462
Catarina, Santa, village of, 426
Cattaeggio, 405
Cauma See, 212
Cavaglia, Alp of, 415
Cavaglio, 317
Cavallina, Val, 462
Cavardiras, Val, 221
Cavargna, Val, 339
Cavargna, village of, 339
Cavel, Val, 296
Cavreccia, Val, 379
Cavrein, Val, 22
Cedeh, Glacier,
Cedeh, Val, 430
Cedrasco, 451
Cellerina, Val, 389
Centovalli, Val, 316
Ceppina, village of, 404
Cercen, Val di, 475
Cernobbio, 329
Cerentino, 314
Cevio, 310
Cervo, Val, 401, 451
Cham, 162
Chandolin, village of, 153
Charmey, commune of, 11
Château d'Oex to Vevey, on foot or horseback (§ 22, Rte. H), 22
Chavornay, 8
Cherasca, Val, 256
Chexbres, 25
Chiamuera, Val, 390, 418
Chiareggio, châlets of, 409

CON

Chiarena Glacier, 430
Chiasso, 335
Chiavenna, 321
Chiavenna to Roveredo (§ 33, Rte. E), 336
Chiavenna, Andeer to, by the Aversthal (§ 35, Rte. L), 382
Chiavenna to Nauders, by the Val Bregaglia and Engadine (§ 36, Rte. A), 385
Chiesa, village of, 409
Chiesa in Val Malenco, Pontresina to, by the Capütschin and Scerscen Passes (§ 36, Rte. H), 410
Chiesa to Poschiavo, by the Passo di Canciano (36, Rte. I), 411
Chiggiogna, 267
Chiosa, Val, 403
Chironico, 309
Choglias, Val, 363
Churwalden, 366
Ciamut, hamlet of, 218
Cierfs, village of, 445
Cinuschel, 391
Cirques Jurassiques, 5
Claro, village of, 268
Cles, town of, 429
Cles to Meran or Botzen (§ 37, Rte. I), 441
Clozza, Val, 392
Clusone, village of, 462
Codera, Val, 321
Cogolo, 437
Coire, town of, 209
Coire, Rorschach to, by railway (§ 28, Rte. C), 234
Coire to Bellinzona, by the Bernardino Pass (§ 31, Rte. A), 280
Coire to Como, by the Splügen Pass (§ 33, Rte. A), 319
Coire to Samaden, by the Julier Pass (§ 35, Rte. A), 365
Coire to Samaden, by the Albula Pass (§ 35, Rte. C), 370
Coire to Davos am Platz, by the Strela Pass (§ 35, Rte. E), 373
Colico, village of, 322
Colico to Milan, by Lecco (§ 33, Rte. B), 330
Colico to Bormio, by the Val Tellina (§ 36, Rte. E), 400
Colico, Introbbio to (§ 38, Rte. H), 459
Collio, village of, 466
Collognasco, 314
Cologne to Altdorf, by Basle, Olten, and Lucerne (§ 26, Rte. A), 147
Comacina, Isola, 328
Comano, baths of, 481
Comballaz, 9
Como district (§ 33), 318
Como, Lake of, 322
Como, town of, 329
Como, Coire to, by the Splügen Pass (§ 33, Rte. A), 319
Como, Bellinzona to, by Lugano (§ 33, Rte. C), 333
Como, Laveno to, by Varese (§ 33, Rte. I), 343
Como to Lecco, by Erba (§ 33, Rte. I), 345
Comologno, 315
Compatsch, hamlet of, 364
Concise, 7
Condino, 473
Condino to Edolo, by Val Daone (§ 40, Rte. C), 478
Constance, city of, 231
Constance, Lake of, 233
Conters, 367

CON

Conzei, Val di, 484
Corenno, 330
Cornära, Val, 218, 273
Cornärarhein torrent, 218
Corno, Val, 273
Cossonay, 8
Costnätsch, châlets of, 303
Courgevaux, village of, 26
Court, 29
Craveggia, village of, 317
—— baths of, 315
Cresciano, village of, 268
Cresta, village of, 380
Crésuz, 26
Creux de Champs, 9
Crispausa, hamlet of, 218
Cristallina, Val, 216, 275
Cristallo, Vedretta di, 433
Crocetta, Lago della, 413
Crodo, village of, 250
—— baths of, 250
Cromerthal, the, 353
Crot, 380
Croves, village of, 253
Cuccio torrent, 339
Cumbels, village of, 296
Curaglia, 216, 275
Curciusa Glacier, 320
Cursola, 317

DACHSEN, village of, 203, 204
Dagmarsellen, 148
Dala Glacier, 41
Dala, valley of the, 41
Dalfazza, 356
Damma Glacier, 142
Daone, Val, 473, 478
Dauben See, the, 37
Davos, valley of, 372
Davos Dörfli, hamlet of, 373
Davos am Platz, 373
Davos am Platz, Coire to, by the Strela Pass (§ 35, Rte. E), 373
Davos am Platz to Süs, by the Fluela Pass (§ 35, Rte. F), 375
Davos am Platz to Scanfs, by the Scaletta Pass (§ 35, Rte. G), 376
Davos am Platz to Scanfs, by the Sertig Pass (§ 35, Rte. H), 378
Davoser See, 373
Dazio Grande (3,059′), 26
Deborence, 14
Delebio, 401, 458
Delémont, village of, 29
Dentro, Val di, 416
Dervio, village of, 330
Devera, river, 253
Devero Alp, 253
Devil's Bridge, 263
Diemtigen, village of, 51
Dietfurt, 240
Dietikon, 159
Dimaro, village of, 429
Dischma Thal, 376
Dissentis, 215, 275
—— excursions from, 215
Dissentis, Basle to, by Schaffhausen and Coire (§ 27, Rte. C), 202
Dissentis to Andermatt, by the Oberalp Pass (§ 27, Rte. D), 217
Dissentis to Amsteg (§ 27, Rte. E), 219

ENG

Dissentis to Stachelberg, by the Sand Grat (§ 27, Rte. F), 220
Dissentis, or Flanz, to Stachelberg, by the Kisten Pass (§ 27, Rte. G), 222
Dissentis to Bellinzona, by the Lukmanier Pass (§ 30, Rte. F), 274
Dissentis to Airolo, by the Passo dell' Uomo (§ 30, Rte. G), 278
Distel Glacier, 104
Diveglia Alp, 255
Dizasco, village of, 340
Dolcino, Campo, village of, 321
Dolcino, Campo, to Mesocco (§ 33, Rte. D), 336
—— by the Passo di Balniscio, 336
—— by the Passo Bardan, 336
Dolcino, Campo, Andeer to, by the Aversthal (§ 35, Rte. M), 383
Domaso, village of, 324
Domène, baths of, 26
Domleschgerthal, the, 281
Dongio, 277
Dongo, village of, 325
Dörfli, Davos, hamlet of, 373
Dosdè, Vedretta di, 416
Dosdè, Val di, 416
Drachenhöhle, the, 133
Drano, 338
Drosdè, Vedretta di, 416
Drun torrent, 217
Druogno, 317
Drusenthal, the, 355, 360
Duana Val, 382
Ducanthal, the, 378
Düdingen, or Guin, 25
Dungel Glacier, 18, 49
Dungelschuss cascade, 17
Dürrenboden, 376
Duvin, village of, 298

EBNAT, 240
Edolo, 460
Edole, Condino to, by Val Daone (§ 40, Rte. C), 478
Edolo, Lovere to, by Val di Scalve (§ 39, Rte. D), 462
Edolo to Sondrio, by the Aprica Pass (§ 29, Rte. E), 463
Edolo, Pinzolo to, by Val Genova (§ 40, Rte. B) 474
Egeri, Lake of, 171
Eggerstanden, 239
Eggiwyl, 129
Eginenthal, 83
Eginenthal, village of, 247
Eigen, village of, 182
Eiger Glacier, 72
Einsiedlen, 172
Elgg, 231
Elm, village of, 225, 226
Elm, Ilanz to, in the Sernft Thal, by the Panixer Pass (§ 27, Rte. H), 223
Elm, Richenau to, by the Segnes Pass (§ 27, Rte. I), 224
Elm to Stachelberg, by the Richetli Pass (§ 27, Rte. M), 229
Emet, Val, 383
Emmatten, village of, 177
Emme river, 127
—— the Kleine, 128
Emmenthal, the, 127
Ems, village of, 211, 280
Engadine, the, 387

ENG

Engadine, Paznaunthal to the, passes from the (§ 34, Rte. H), 360
Engelberg, village of, 174
Engelberg, Sarnen to (§ 25, Rte. C), 133
Engelberg, Meyringen to (§ 25, Rte. D), 134
Engelberger Aa, the, 173
Engelhörner, the, 66
Engi, 225, 228
Engstlen Alp, 135
Engstligenthal, 47
Enneda, village of, 189
Entlebuch, village of, 128
Entlebuch, the, 128
Erba, 345
Erba, Bellaggio to, by Val Assina (§ 33, Rte. K), 344
Erba, Piano d', 345
Erlenbach, 21
Err, Val, 367
Erstfelden, 175
Erstfelderthal, 261
Eschia, Val d', 390
Escholzmatt, village of, 127
Esino, village of, 455
Estavayer, 25
Etivaz, valley of, 11
Etzli Thal, 220
Etzliboden, 220

FAEDO, 451
Fählensee, 243
Faido, 267
Faido, Locarno to, by Val Verzasca (§ 32, Rte. B), 308
Fain, Val del, 398, 412
Faldumthal, 46
Faller, Val, 368
Fargorida, Val de, 475, 477
Fargorida, Vedretta di, 477
Farnbühl, 128
Fätschbach, fall of the, 178, 190
Faulberg Cave, 88
Fava, La (8,589'), 14
Federia, Val, 418
Fedoz, Val, 386, 389
Fedoz, Vadred de, 386
Feldkirch, 350
Feldkirch to Maienfeld (§ 34, Rte. C), 354
Fellithal, 262
Felsberg, 211
Ferden, hamlet of, 46
Ferden, Baths of, Leuk to (§ 23, Rte. D), 46
Fermuntthal, the, 352, 362
Fermuntthal, Klein, 353
Ferrera torrent, 214
Ferrera, Ausser, 380
Ferrerathal, the, 380
Fettan, 392
Fideris, village of, 356
—— baths of, 356
Filisur, village of, 370
Fimberthal, the, 353
Finstermünz, Ischgl to, by the Vignitz Pass, 363
Finstermünz, Ischgl to, by the Zebles Pass, 363
Finstermünz, Mies to, by the Gribelle Joch, 364
Fiumenero, 449
Flawyl, 232
Flatzbach river, 393
Flendra, hamlet of, 11
Fless, Val, 358
Fliersch, 351

GAR

Flims, village of, 212, 224
Flimser Fern, glacier of, 224
Flimserstein, the, 212
Flimserwald, the, 212
Fluelen, 156
Fluelen to Bellinzona, by the St. Gothard Pass (§ 30, Rte. A), 259
Flühli, oratory of, 132
Flum torrent, 222
Flums, 206, 229
Flümserthal, the, 206
Folsogno, 316
Fondo, village of, 441
Fonds, Chaux de, town of, 7
Fontana, Val, 402
Foppiano, 250
Foppolo, village of, 451
Forest Cantons, district of the (§ 26), 146
Formazza district (§ 29), 246
Formazza, Val, 247, 249
Formazza (Andermatten) to Airolo, by the Passo di San Giacomo (§ 29, Rte. B), 250
Formazza (Andermatten), Viesch to, by the Albrun Pass and Lebendu (§ 29, Rte. C), 251
Forno, Val, 430
Forno, Vedretta di, 430.
Foroglio, hamlet of, 312
Fouly, village of, 13
Fraële, Val, 443
Franzanenshöhe, 423
Frastenz, 350
Frauenthor, the, 295
Frauenkirch, 373
Fribourg, town of, 24, 25
Fribourg, Vevey to (§ 22, Rte. I), 23
Friedrichshafen, 231
Frisal Glacier, 222
Frisal Thal, 222
Frodolfo torrent, 425
Fruthwald, hamlet of, 249
Frutigen, village of, 34
Fuldera, 445
Fum, Val di, 459, 460, 472, 478, 479
Fum, Vedretta di, 479
Fuorns, hamlet of, 215
Furth, village of, 298
Furva, Val, 425
Fusine, 451
Fusio, 310

GABIOL, Val, 475
Gadmen, commune of, 137
Gais, village of, 236, 238
Gais, Rorschach to (§ 28, Rte. D), 235
Galgenen, 183
Gallarate, 308
Gallo, Val del, 418
Galthür, village of, 353
Galthür to Ardetz, by the Futschöll Pass, 362
Gamchi Glacier, 42
Gamchi Lücke, the, 100
Gamchilücke, the, 98
Gämmerrhein torrent, 218
Gämmerthal, or Val Tiarms, 218
Gampel, village of, 46
Gamperthonthal, the, 351
Gams, 241
Gandino, village of, 449
Ganeyerthal, the, 355, 360
Gannerathal, the, 361
Gardone, 466

GAR

Gardone in Val Trompia, Iseo to (§ 39, Rte. H), 466
Gargellenthal, the, 361
Garlate, Lago di, 322
Gaschurn to Klosters, by the Garneira Joch, 361
Gauerthal, the, 352
Gauli Glacier, 123, 124
Gavardina, Val, 484
Gavia Glacier, 427
Gavirate, 343
Gleisholz, hamlet of, 66
Gelmer See, 79
Gelten Glacier, 17, 49
Geltern alp, 17
Gemmi district, the (§ 23), 27
Genevcys, Haut, 7
Genova, Val di, 470, 474
Gentelthal, 134
Geren Glacier, 273
Gersau, 155, 165
Gertrud, S., village of, 439
Geschnen, village of, 263
Geschenenthal, 143, 263
Geschwänd, Unter, 165
Gersau to the Rigi, 165
Gessenay, town of, 20
Gestaad, 131
Gestelen, Nieder, 46
Ghebbo, hamlet of, 256
Ghiacciato, Lago, 382
Ghiandone, Serizzo, 405
Ghirone, 294
Giessbach waterfall, 61
Giessen Glacier, 72
Giornico, 267
Giswyl, plain of, 132
Giudicaria, district of, 472
Giuf, Val, 217
Glaris, 372
Glarus, town of, 188
Glarus, Schwyz to, by the Pragel Pass (§ 26, Rte. K), 178
Glarus, Lachen to, by the Wäggi Thal (§ 26, Rte. N), 183
Glarus to Ragatz, by the Sernfthal and Sardona Glacier (§ 27, Rte. K), 225
Glarus to Sargans, by the Sernfthal (§ 27, Rte. L), 228
Glatt river, 204
Glenner river, 293
Gliems Glacier, 221
Gliems, Val, 221
Glurns, 445
Goldau, 165, 168
Goldau to the Rigi, 165
Gomagoi, 424, 438
Gond, hamlet of, 431
Gonten, village of, 242
Gordola, 308
Gottardo, S., 425
Grafenort, hamlet of, 174
Graggi, châlet of, 144
Gramser Ferner, or Zufrid Ferner, 439
Grandson, battle-field of, 7
Grandvaux, 25
Gravedona to Bellinzona (§ 33, Rte. F), 337
Grassen Glacier, 138
Greifensee, Lake of, 204
Greifenstein, ruins of, 370
Greina, Val, 294
Grevo, 460
Grialetsch Glacier, 376

HEI

Griante, village of, 327
Gribellethal, the, 353, 364
Grimsel Hospice, 79
Grimsel, Grindelwald to the (§ 24, Rte. K), 112
—— by the Strahleck Pass, 113
—— by the Finsteraar Joch, 116
—— by the Lauteraar Joch, 117
Grimsel, Meyringen to the, by the Gauli Pass (§ 24, Rte. N), 124
Grimsel to the Æggischhorn (§ 24, Rte. O), 124
—— by the Oberaar Joch, 125
—— by the Studer Joch, 126
Grimsel, Mühlenstalden to the, by the Triftgletscher Joch (§ 25, Rte. F), 139
Gries Glacier, 248
Grindelwald, village of, 68
Grindelwald Glacier, Ober, 68
—— Unter, 68
Grindelwald to the Æggischhorn (§ 24, Rte. I), 106
—— by the Jungfrau Joch, 106
—— by the Eiger Joch, 108
—— by the Mönch Joch, 109
—— by the Viescher Joch, 112
Grindelwald to the Grimsel (§ 24, Rte. K), 112
—— by the Strahleck Pass, 113
—— by the Finsteraar Joch, 116
—— by the Lauteraar Joch, 117
Grindelwald Glacier, Ober, 117
Grindelwald, Meyringen to, by the Bergli Joch (§ 24, Rte. M), 123
Grion, 12, 13
Grionne, valley of the, 12
Griosch, 363
Gromo, 419
Gronda, Val, 213
Grosina, Val, 403, 404
Grosio, 404, 461
Grub village, 236
Grünhorn Glacier, 88
Grüsch, 355
Grüth, the, 155
Gruyères, town of, 19
Gsteig, village of, 16, 18
Guarda, village of, 362, 391
Guarda, Pattenen in Montafun to, by the Fermunt Pass (§ 34, Rte. G), 362
Guggi Glacier, 72
Guin, or Düdingen, 25
Gurnigel, baths of, 26
Guttanen, village of, 78
Guttannen, Stein Alp to, by the Steinlimmi and Furtwang Passes (§ 25, Rte. G), 142

HAAG, 235, 241
Haag, Weissbad to, by the Saxer Lücke, 239
Habkeren, village of, 60
Habkeren, valley of, 128
Habkerenthal, 60
Habsburg, castle of, 158
Hahnenmoos, 52
Haldenstein, castle of, 209
Handeck, the, 79
Haslithal, the, 63
—— Ober, 78
Hätzingen, village of, 190
Heiden, 236
Heiligen Kreuz, hamlet of, 255
Heirichsbad, 234

HEL

Helle Platte, 79
Hergiswyl, village of, 132, 151
Hergottswald, 152
Herisau, village of, 234
Herrenrüti, châlets of, 174
Herzogenbuchsee, 31
Hindelbank, 31
Hinterrhein, village of, 284
Hinterrhein to the source of the Rhine (§ 31, Rte. B), 286
Hinterrhein, Ilanz to, by the Valserberg (§ 31, Rte. G), 300
Hochstetten, village of, 127
Hohenferner, 431, 438
Hohle Gasse, the, 162
Hohen-Rhätien, castle of, 281
Hohenstollen, the, 132
Hohentrins, 212
Hohsand Glacier, 253
Hölle Chasm, 289
Hongrin river, 11
Horben, 129
Horbis Thal, 174
Horgen, 161, 186
Hospenthal, 265
Hospenthal to Obergestelen, by the Furka Pass (§ 30, Rte. C), 271
Hospice of St. Gothard, 265
Hospital all' Acqua, 251
Hüfi Glacier, 198, 221
Hümmelwald, 233
Hundwyl, 241

IBACH, 179
Iberg, village of, 173
Idro, Lake of, 473
Iffigen, hamlet of, 49
Iffigenthal, 48
Ilanz, city of, 213
Ilanz, or Dissentis, to Stachelberg, by the Kisten Pass (§ 27, Rte. G), 222
Ilanz to Elm, in the Sernft Thal, by the Panizer Pass (§ 27, Rte. H), 223
Ilanz to Olivone, by the Vrinthal (§ 31, Rte. E), 294
Ilanz to Olivone, by the Zavareila Thal (§ 31, Rte. F), 298
Ilanz to Hinterrhein, by the Valserberg (§ 31, Rte. G), 300
Ill river, 350
Ill, valley of the, to the Prættigau, passes from the (§ 34, Rte. F), 360
Ilmenstein, hamlet of, 122
Imagna, Val, 452
Imfeld, hamlet of, 252
Immensee, 162, 164
Immensee to the Rigi, 164
Incino, 346
Inden, 41
Interlaken, town of, 59
Interlaken and Meyringen, Thun to, or Reichenbach (§ 24, Rte. A), 58
—— by the Lake steamers, 58
—— Thun to Brienz by carriage-road, 63
—— Thun to Brienz by footpath, 64
Interlaken, Meyringen to, by Grindelwald and Lauterbrunnen (§ 24, Rte. B), 65
Interlaken to Kandersteg (§ 24, Rte. E), 95
—— by carriage-road, 95
—— by the Saxetenthal, 95
—— by the Sansgrat, 95

KAT

Interlaken to Burgdorf, by the Emmenthal (§ 24, Rte. O), 128
Intelvi, Val, 339
Intra, village of, 307
Intra, or Pallanza, to Domo d'Ossola, by Val Intrasca (§ 32, Rte. K), 317
Intragna, village of, 315, 316
Intragna, Val, 318
Intrasca, Val, 317
Introbbio, Varenna to (§ 38, Rte. F), 455
Introbbio to Colico (§ 38, Rte. H), 457
Ischgl, village of, 353
Ischgl to Finstermünz, by the Zebles Pass, 363
Ischgl to Finstermünz, by the Vignitz Pass, 363
Ischgl to Remüs, by the Fimber Joch, 363
Isella, 256
Isella, Viesch to, by the Ritter Pass (§ 29, Rte. E), 254
Isella to Premia, by the Val Cherasca (§ 29, Rte. F), 256
Iseltwald, village of, 65
Iselten, 176
Isenfluh, village of, 76, 96
Isenthal, village of, 176
Isenthal, Klein, 176
Iseo, Lake of, 460
Iseo, 461
Iseo to Gardone in Val Trompia (§ 39, Rte. H), 466
Isola Comacina, 328
Isolaccia, village of, 416
Isone, 333
Isorno river, 315

JACOBSBAD, 242
Jaffischthal, 255
Jagi Glacier, 93
Jamthal, the, 353, 362
Jamthaler Ferner, 362
Jaun, or Jogne, river, 11
Jaun, village of, 12
Jenatz, village of, 356
Jenisberg, village of, 372
Jogne, or Jaun, river, 11
Joux, Lac de, 7
Juf, hamlet of, 381
Jungfrau Glacier, 88
Jüngibrunnen, the, 135

KALFEUSER THAL, 227
Kanalthal, the, 299
Kander river, 33
Kander Glacier, 101
Kandersteg, village of, 34
Kandersteg, Thun to, by the Kien Thal (§ 23, Rte. B), 41
Kandersteg to Turtman, or Visp, by the Lötschen Pass (§ 23, Rte. C), 44
Kandersteg to Lauenen, by Adelboden and An der Lenk (§ 23, Rte. G), 51
Kandersteg, Interlaken to (§ 24, Rte. E), 95
Kandersteg, Lauterbrunnen to (§ 24, Rte. F), 96
—— by the Sefinen Furke, 96
—— by the Tschingel Pass, 97
Kappel, 240
Kärstelenthal, 198
Käseren Alp, Ober, 242
Kästris, 212
Katzis, village of, 281

KEH

Kehle Glacier,
Kerns, village of, 132
Kienholz, 62
Kien Thal, the, 42
Kienthal, village of, 42, 96
Kippel, Baths of, Leuk to (§ 23, Rte. D), 46
Kippel, village of, 45, 46, 103
Kirchbergerthal, 439
Klön See, 179
Klösterli, 165
Klosters, commune of, 359
Klosters to Lavin, by the Laviner Joch (§ 34, Rte. E), 360
Klosters, St. Gallenkirch to, by the Schlappiner Joch, 361
Klosters, Gaschurn to, by the Garneira Joch, 361
Klosters, Pattenen to, by the Sardasca Pass, 362
Klosters, Lenz to, by Davos (§ 35, Rte. D), 372
Klosterthal, the, 351
Klus, the cleft so called, 12
Königsfelden, abbey of, 158
Krauchthal, 228
Kray Alp, 243
Kreuzerberg, 189
Kriegalp Thal, 255
Küblis, village of, 65, 356
Küblis, Schruns to, by the Gampadel Joch (?), 360
Küblis, Schruns to, by the Plasseggen Pass, 361
Kühalpthal, the, 378
Kuppelwiese, 439
Küssnacht, village of, 162, 163
Küssnachter See, 153
Küssnacht to the Rigi, 163
Kyburg, castle of, 204

LAAS, village of, 434
Laas to Sulden, by the Laaserthal (§ 37, Rte. E), 434
Laaseralm, 434
Laaserthal, 434
Laaserthal Ferner, 434
Laax, 212
Lachen, 187
Lachen to Schwyz or Glarus, by the Wäggi Thal (§ 26, Rte. N), 183
Laglio, 328
Laino, 340
Lambro river, 344
Lämmeren Glacier, 52, 53
Lana, Unter, 440
—— Ober, 440
Landeck, 351
Landeck, Bregenz to, by Feldkirch and the Arlberg Pass (§ 34, Rte. A), 350
Landeck, Bludenz to, by Montafun and the Paznaunthal (§ 34, Rte. B), 352
Lang Thal, 254
Langnau, 127
Langwies, village of, 374
Landquart torrent, 208
Landquart bridge, 355
Landquart station, 355
Lanzada, village of, 411
Lareinthal, the, 353
Laris, Vedretta di, 475
Latsch, 431
Latsch, Santa Catarina to, by the Passo Cevedale (§ 37, Rte. C), 430

LIC

Latte, Flume, 331
Latterbach, 22
Laubeck, gorge of, 20
Lauenen, 17, 52
Lauenen, Kandersteg to, by Adelboden and An der Leuk (§ 23, Rte. F), 51
Lauenen See, 17
Lauffen, 29
Lauffenburg, town of, 202
Laupen, 24
Lausanne, town of, 8
Lausanne to Berne (§ 22, Rte. K), 24
Lauter See, 218
Lauterbrunnen, valley of, 75
Lauterbrunnen, village of, 75
Lauterbrunnen to Kandersteg (§ 24, Rte. F), 96
—— by the Sefinen Furke, 96
—— by the Tschingel Pass, 97
Lauterbrunnen to Turtman, by the Lötschenthal (§ 24, Rte. G), 101
Lauterbrunnen to the Æggischhorn, by the Lötschen Lücke, or the Lawinen Thor (§ 24, Rte. H), 103
—— by the Petersgrat and Lötschen Lücke, 104
—— by the Lawinen Thor, 105
Lavace torrent, 441
Lavaz, Val, 293
Laveno, 307, 343
Laveno to Como, by Varese (§ 33, Rte. I), 343
Laver, Val, 363
Lavertezzo, village of, 308
Lavin, 391
Lavin, Klosters to, by the Laviner Joch (§ 34, Rte. E), 360
Lavirum, Val, 390, 418
Lavizzara, Val, 311
Lax, 83
Lebendu lake, 254
Lécherette, 11
Lecco, town of, 332
Lecco, Lago di, 331
Lecco, Como to, by Erba (§ 33, Rte. I), 345
Lecco to Bellano, by Val Sassina (§ 33, Rte. E), 453
Ledro, Lake of, 483
Ledro, Val di, 483
Ledro, Pieve di, 485
Ledro, Pieve di, to Tione (§ 40, Rte. F), 484
Legno, Ponte di, to Santa Catarina, by the Gavia Pass (§ 39, Rte. F), 463
Lei, Val di, 382, 383
Leissingen, village of, 63, 95
Lenk, An der, 48
Lenk, An der, to the Baths of Leuk (§ 23, Rte. G), 53
Lenno, village of, 328
Lenta Glacier, 300
Lenz to Klosters, by Davos (§ 25, Rte. D), 372
Lenz, village of, 366
Lepontine Alps, 245
Lesina, Val, 401
Leuenfall, the, 237
Leuk, or Louèche, 41
Leuk, Baths of, 39
Leuk, Baths of, Paris to the, by Basle and Thun (§ 23, Rte. A), 28
Leuk, Baths of, to Ferden or Kippel (§ 23, Rte. D), 46
Leuk, Baths of, to An der Lenk (§ 23, Rte. G), 52
Leventina, Val, 266
Lichtensteig, 233
Lichtenstein, castle of, 20

LIC

Lichtenstein, principality of, 354
Liesth l. 30
Limmern Alp, 222
Limmern river, 193
Limmernbach torrent, 222
Limmerntobel, the, 192
Linththal, village of, 190
Lioson, Lake of, 9
Liro torrent, 324, 337
Lischanna, Vadret, 392
Lisighaus, hamlet of, 240
Livigno, Val, 416, 418
Livrio, Val del, 401, 451
Lizerne river, 14
Locarno district (§ 32), 303
Locarno, town of, 305
Locarno to Faido, by Val Verzasca (§ 32, Rte. B), 308
Locarno to Airolo, by the Val Lavizzara (§ 32, Rte. C), 309
Locarno to Airolo, by Val Bavona (§ 32, Rte. D), 311
Locarno to Andermatten in Val Formazza (§ 32, Rte. E), 314
Locarno to Domo d'Ossola, by Val Onserone (§ 32, Rte. G), 315
Locarno to Domo d'Ossola, by Val Vigezzo (§ 32, Rte. H), 316
Locarno to Premia, by Val Rovana (§ 32, Rte. F), 315
Locle, village of, 7
Lodrone, 473
Lodrone, Breno to, by the Croce Domini Pass (§ 39, Rte. G), 465
Lodrone, Brescia to, by Val Trompia (§ 39, Rte. I), 466
Lodrone to Riva, by Val Ampola and the Lake of Ledro (§ 40, Rte. E), 482
Lohn, village of, 283
Lombach torrent, 60
Lombard Alps, 447, 448
Lombardo, Mezzo, 429
Lontsch torrent, cascades of the, 181
Lorina torrent, 277
Lorina, Val, 485
Lostallo, 287
Lötschen Glacier, 104
Lötschenthal, the, 103
Lovere, village of, 462
Lovere to Edolo, by Val di Scalve (§ 39, Rte. D), 462
Lowerz, 165, 169
Lowerz to the Rigi, 165
Lu, village of, 445
Lucerne, town of, 132, 149
Lucerne, Berne to, by the Entlebuch (§ 24, Rte P), 127
Lucerne, Brienz or Meyringen to, by the Brünig (§ 25, Rte. A), 130
Lucerne, Basle to, by Zurich (§ 26, Rte. B), 157
Lucerne to Schwyz and Brunnen (§ 26, Rte. C), 168
Lucerne, Lake of, 153
Lucendro, Lago di, 265
Luchsingen, 189
Lugano, town of, 334
Lugnetzthal, the, 295
Luino, village of, 307, 337
Luino to Menaggio, by Lugano (§ 33, Rte. G), 337
Lumbrein, village of, 296
Lumino, 287
Lüner See, the, 351

MAT

Lüner See to Seewis, 360
Lungern, village of, 130
Lungern, Lake of, 130
Lütschine, Schwarze, 71
Lütschine, Weisse, 76
Luzein, village of, 356
Luzienstieg, fortress of, 354

MADATSCHFERNER, 423
Maderanerthal, 198, 269
Madrano, village of, 278
Madonna del Monte, La, at Varese, 343
Madre, Val, 401
Madriserthal, the, 383
Madritschthal, 436
Madulein, village of, 390
Magadino, 304
Maggia, village of, 309
Maggia, Val, 309
Maggiore, Lago, 306
Magreglio, 344
Maien, village of, 138
Maienbach, torrent of the, 138
Maienfeld, town of, 208, 355
Maienfeld, Feldkirch to (§ 34, Rte. C), 354
Maienfeld to Süs, by the Prættigau and the Vereina Pass (§ 34, Rte. D), 355
Maienthal, the, 138
Mala, Via, the, 282
Maladers, village of, 374
Malans, village of, 208, 355
Malè, village of, 429
Malè to Trafoi, by the Suldenthal (§ 37, Rte. F), 435
Malè to St. Pankraz in the Ultenthal (§ 37, Rte. H), 429
Malè in Val di Sole to Brescia, by the Tonale Pass and Val Camonica (§ 39, Rte. A), 449
Malè to Salò on the Lake of Garda, by Val Rendena and the Lake of Idro (§ 40, Rte. A), 460
Malenco, Val, 402, 409
Malero torrent, 402
Malgrate, 346
Malleray, 30
Mals, 424, 445
Mals, Bormio to (§ 37, Rte. A), 420
Mals, Zernetz to, by the Ofen Pass and Val Mustair (§ 37, Rte. L), 444
Mals, Schuls to, by Val Scarla (§ 37, Rte M), 445
Mals, Remüs to, by Val d'Uina (§ 37, Rte. N), 446
Malvaglia, Val, 277
Malvaglia, village of, 277
Mandello, village of, 331
Mandron hut, 475, 477
Mare, Val della, 428, 437
Margno, village of, 457
Maria, village of, 387
Maria Schmelz, 431
Märjelen See, 86
Marmorera, village of, 368
Marschlins, towers of, 208
Marozzo, Val, 382
Martinet, Glacier de, 13
Martinsbruck, 393
Martinsloch, the 224
Marza, Val, 482
Masino, Val, 405
Masino, Bagni del, 406
Massa river, 84
Matarotto, Vedretta di, 475, 477

MAT

Mathon, village of, 238
Matt, 226, 228
Matten, hamlet of, 48
Mättithal, 255
Maurone, Sasso, 404
Mayenwand, 82
Mazza, Val, 464
Mazzo, 403
Mech See, 132
Medelser Glacier, 215, 275
Medelserthal, the, 275
Meglis Alp, 238
Meilen, village of, 186
Melano, village of, 342
Melch Thal, the, 132
Melchthal, village of, 132
Meledro river, 429
Melezza river, 305, 316
Melide, 335
Mella river, 466
Mels, 206, 228
Menaggio, 325
Menaggio, Luino to, by Lugano (§ 33, Rte. G), 337
Mendrisio, village of, 335
Mera, Val, 415
Meran, Rabbi to, by the Ultenthal (§ 37, Rte. G), 439
Meran, Cles to (§ 37, Rte. I), 441
Merlingen, 64
Merzenthal, the, 247
Mesocco, Val, 286
Mesocco, village of, 286
Mesocco, Campo Dolcino to (§ 33, Rte. D), 336
—— by the Passo di Balniscio, 336
—— by the Passo Bardan, 336
Meyerhof, hamlet of, 213
Meyringen, village of, 63
Meyringen, Thun to (§ 24, Rte. A), 58
Meyringen to Interlaken, by Grindelwald and Lauterbrunnen (§ 24, Rte. B), 65
Meyringen to Briegg, by the Grimsel (§ 24, Rte. C), 77
Meyringen, Rosenlaui to, by the Urbachthal and Weitsattel (§ 24, Rte. L), 121
Meyringen to Grindelwald, by the Bergli Joch (§ 24, Rte. M), 123
Meyringen to the Grimsel, by the Gauli Pass (§ 24, Rte. N), 124
Meyringen to Lucerne, by the Brünig (§ 25, Rte. A), 130
Meyringen to Stanzstad, by the Melch Thal (§ 25, Rte. B), 132
Meyringen to Engelberg (§ 25, Rte. D), 134
Meyringen to Wasen, by the Susten Pass (§ 25, Rte. E), 137
Mezzo Lombardo, 429
—— Tedesco, 430
Mezzola, Lago di, 321
Mies to Finstermünz, by the Gribelle Joch, 364
Milan, city of, 333
Milan, Colico to, by Lecco (§ 33, Rte. B), 330
Minor, Val, 413
Mitlödi, 189
Mitterbad, 440
Moesola, Lago di, 285
Moffette, the, 392
Molins, 367
Molkenkur, 170, 231
Mollis, village of, 188
Moltrasio, 329
Molveno, Lake of, 486
Molveno, village of, 487

NAM

Mompé Medels, village of, 275
Mondadizza, 404
Montafun, valley of, 352
Montagna, vineyards of, 402
Montboron, 20
Monte, Val del, 428
Montorfano, Lake of, 345
Montreux, 8
Monza, 332
Morat, town of, 26
Morat, Lake of, or Murton See, 26
Morbegno, 401
Morbegno to the Val Bregaglia, by Val Masino (§ 36, Rte. F), 405
Morbegno, Bergamo to, by the Passo di San Marco (§ 38, Rte. C), 453
Morbegno, Piazza to, by Val Stabina (§ 38, Rte. D), 452
Morbegno to Bellano, by Val Varrone (§ 38, Rte. G), 456
Morge river, 15
Morignone, Serra di, 404
Morobbia, Val, 337
Morte, Glacier de la Plaine, 47, 56
Morter, 431
Morteratsch Glacier, 395
Morteys, 11
Morzé, Glacier de, 18
Mosses, hamlet of, 11
Motiers, 5
Mouchard, 4
Moudon, town of, 25
Moutiers, Val, or Münsterthal, 29
Moutiers Grandval, 29
Muccia Glacier, 285
Muggia, Val, 342
Muggio, village of, 342
Mugliz, glen of, 371
Mühlestalden, village of, 137
Mühlenstalden to the Grimsel, by the Trift-gletscher Joch (§ 25, Rte. F), 139
Mühlethal, village of, 137
Mühlethal, the, 225
Mühlinen, 34
Müllhorn, 205
Münster, village of (§ 24, Rte. C), 82
Münster, village of (§ 37, Rte. I), 445
Münsterthal, or Val Moutiers (§ 23, Rte. A), 29
Münsterthal (§ 24, Rte. C), 83
Münsterthal, or Val Mustair (§ 37, Rte. L), 445
Muotta river, 179
Muotta, village of, 179
Muotta to Altdorf (§ 26, Rte. L), 181
—— by the Kinzig Kulm, 181
—— by the Riemenstaldenthal, 182
Muotta to Stachelberg, by the Bisithal (§ 26, Rte. M), 182
Muottathal, the, 179
Murg, 205
Mürren, hamlet of, 76
Murten See, or Lake of Morat, 26
Musso, castle of, 323
Mustair, V, 442, 445
Mutten Glacier, 271
Mutten See, 222
Muttenthal, the, 271

NÄFELS, village of, 188
Nalps, châlets of, 217
Nalps, Bolkata de, 217
Nalpser Thal, 217
Nambino, Val, 470

NAM

Nambrone, Val, 471
Nandro, Val, 367
Narcane, Val di, 476
Narcane, Vedretta di, 476
Narcanello, the, 476
Nardis, 458
Nardis, Alp of, 471
Nardis, Vedretta di, 471
Narrenbach, 51
Narret, Lago di, 311
Naters, 84
Nauders, 393
Nauders, Chiavenna to, by the Val Bregaglia and Engadine (§ 36, Rte. A), 385
Neinerthal, the, 439
Nellenbalm, the, 71
Nenzing, 351
Nenzing to Seewis, by the Grosse Furka, 360
Nenzing to Seewis, by the Kleine Furka, 360
Nero, Lago, 313, 413
Nesselthal, village of, 137
Nesslau, village of, 240
Nesslau to St. Gall, by Urnäsch (§ 28, Rte. H), 241
Nesslau to Weissbad (§ 28, Rte. I), 242
Nesslau to Wesen (§ 28, Rte. K), 242
Nesso, 326
Nest Glacier, 103
Netstall, village of, 188, 189
Neuchâtel, town of, 6
Neuchâtel, Lake of, 6
Neueneck, 24
Neuf, Pont, 15
Neuhaus, village of, 58
Neukirch, village of, 302
Nicolaus, St., 439
Nicolo, S., village of, 425
Nidau, 30
Nieder See, 188
Niederbach, the, 225
Niederwald, 83
Nidwalden, 133
Noiraigue, 5
Nolla torrent, 281
Non, Val di, or Nonsberg, 429
Nos torrent, 429
Nossa, Ponte di, 449
Nufenen, hamlet of, 284
Nüziders, 351

OBER SEE, 188
Oberaar Glacier, 125
Oberalp See, 218
Obergestelen, village of, 83, 247
Obergestelen to Domo d'Ossola, by the Gries Pass (§ 29, Rte A), 247
Obergestelen, Hospenthal to, by the Furka Pass (§ 30, Rte. C), 271
Obergestelen to Airolo, by the Nufenen Pass (§ 30, Rte. D), 273
Oberhalbstein, 367
Oberhofen, village of, 64
Oberhorn See, 98
Oberland Tariff, the, 54, 57
Oberland. *See* Bernese Oberland
Oberried, 235
Obersaxen, 213
Oberschönenbach, 179.
Oberstaffelbach, the, 198
Obervatz, village of, 369
Oberwald, 82
Ochsenthal, the, 362

PAR

Oeschinen See, 43
Oex, Château d', 20
Oex, Château d', town of, 11
Oex, Château d', Ormond Dessus to (§ 22, Rte. B), 11
Ofen Wirtzhaus, the, 444
Oggebbio, 307
Oglio river, 460
Olgia, village of, 316
Olginate, 332
Olginate, Lago di, 332
Olgisca, village of, 330
Olivone, 277, 294
Olivone, Trons to, by the Greina Pass (§ 31, Rte. D), 292
Olivone, Ilanz to, by the Vrinthal (§ 31, Rte. E), 294
Olivone, Ilanz to, by the Zavareila Thal (§ 31, Rte. F), 298
Olmo, village of, 451
Olten, 31
Onserone, Val, 315
Orasso, 317
Ormond Dessus, or Plan des Iles, 9
Ormond Dessus, Paris to, by Neuchâtel and Lausanne (§ 22, Rte. A), 4
Ormond Dessus to Château d'Oex and Bulle (§ 22, Rte. B), 11
Ormond Dessus to Bex (§ 22, Rte. C), 12
Ormond Dessus, Saanen to (§ 22, Rte. F), 18
Ormonds, Val des, 9
Orsi, Val degli, 427
Orso, Buca dell', 328
Orteler district (§ 37), 419
Orteler Glacier, 425
Osogna, village of, 268
Osso, village of, 253
Ossola, Domo d', 250—Val d', 247
Ossola, Domo d', Obergestelen to, by the Gries Pass (§ 29, Rte. A), 247
Ossola, Domo d', Locarno to, by Val Onserone (§ 32, Rte. G), 315
Ossola, Domo d', Locarno to, by Val Vigezzo (§ 32, Rte. H), 316
Ossola, Domo d', Canobbio to, by Val Canobbina (§ 32, Rte. I), 317
Ossola, Domo d', Pallanza or Intra to, by Val Intrasca (§ 32, Rte. K), 317
Osola, Val d', 308
Osteno, 340
Ouchy, 8

PAGNONE, village of, 457
Palazzolo, village of, 461
Pali Dulca lake, 219
Pallanza, village of, 307
Pallanza, or Intra, to Domo d'Ossola, by Val Intrasca (§ 32, Rte. K), 317
Pallobbia, Val, 460
Palü Glacier, 398
Pancraz, St., village of, 440
Pancraz, St., in the Unterthal, Malè to (§ 37, Rte. H), 441
Panix, hamlet of, 223
Pantenbrücke, the, 192
Paradies, 288
Paris to Ormond Dessus, by Neuchâtel and Lausanne (§ 22, Rte. A), 4
Paris to the baths of Leuk, by Basle and Thun (§ 23, Rte. A), 28
Parpan, village of, 366
Partnaunthal, 361

PAT

Pattenen, village of, 352
Pattenen to Klosters, by the Sardasca Pass (?), 362
Pattenen in Montafun to Guarda, by the Fermunt Pass (§ 34, Rte. G), 362
Payerne, town of, 25
Paznaun, 353
Paznaunthal, the, 353
Paznaunthal to the Engadine, passes from the (§ 34, Rte. H), 362
Pazzola, Val, or V. Terms, 217
Peccia, village of, 310
Peccia, Val, 314
Pedenosso, village of, 443
Pederthal, 434
Peiden, baths of, 296
Peilerthal, the, 300
Peist, village of, 374
Pejo, 428
Pejo, Val di, 428
Pelizzano, village of, 428
Pelugo, 471
Pentirone, Val, 277
Perledo, 455
Pers, Vadret, 395
Pescarzo, 460
Pesciora, Glacier of, 273
Peterzell, village of, 233
Pezzo, village of, 463
Pfäfers, village of, 208
Pfäfers, hot springs of, 206
Pfafferthal, Ausser, 103
—— Inner, 103
Pfahlbauten, 413
Pianazzo, village of, 320
Piazza to Morbegno, by Val Stabina (§ 38, Rte. D), 452
Pierre Pertuis, the, 30
Pieve di Ledro, 467, 483
Pieve di Ledro to Tione (§ 40, Rte. F), 484
Pintga, Val, 221
Pinzolo, village of, 470
Pinzolo to Edolo, by Val Genova (§ 40, Rte. B), 474
Pinzolo to Riva, by the Bocca di Brenta and Molveno (§ 40, Rte. H), 486
Piombo, Buca del, 346
Piona, Lago di, 330
Piora, Val, 278
Pischa Glacier, 357
Piscidella, village of, 413
Pitasch, village of, 298
Piuro, site of the town of, 385
Plafna, Val, 392
Plans, Les, 13
Platta, 216
Platta, 275
Plattamala, 414
Plattas Alp, 216
Platten, hamlet of, 103, 105
Plessur torrent, 210, 374
Pleun Thal, the, 212
Plima torrent, 431
Pliniana, Villa, 329
Plons, 206
Polaveno, village of, 466
Pommat, village of, 249
Ponal torrent, 483
Pont, Le, 7
Pontarlier, town of, 4
Ponte, village of, 371, 390
Ponte, Bormio to, by the Casana Pass, 418
Ponte, Al, châlets, of, 253

RAT

Ponte, Capo di, 450
Pontresina, village of, 393
Pontresina, Samaden to (§ 36, Rte. B), 393
Pontresina, excursions from, 394, 397
Pontresina to Chiesa in Val Malenco, by the Capütschin and Scerscen Passes (§ 36, Rte. H), 410
Pontresina to Bormio (§ 36, Rte. L), 41
Poras Glacier, 217
Porcellizza, Val, 406
Porchabella, Vadred da, Glacier of, 371
Porlezza, village of, 338
Porlezza, Aregno to, by the Val Intelvi (§ 33, Rte. H), 339
Poschiavo, village of, 413
Poschiavo, Chiesa to, by the Passo di Canciano (§ 36, Rte. I), 411
Poschiavo, Lago di, 414
Prad, village of, 424
Prad, Santa Catarina to (§ 37, Rte. D), 432
Prættigau district (§ 34), 349
Prættigau, passes from the valley of the Ill to the (§ 34, Rte. F), 360
Prato, village of, 310
Prato, Val di, 310
Premadio, 416
Premana, village of, 457
Premia, village of, 250, 254
Premia, Viesch to, by the Binnenthal (§ 29, Rte. D), 253
Premia, Isella to, by the Val Cherasca (§ 29, Rte. F), 256
Premia, Locarno to, by Val Rovana (§ 32, Rte. F), 315
Prese, Le, 414
Preseglie, 467
Prestine, 452, 465
Promontogno, 386
Proves, village of, 441
Prunas, Val, 390
Puntaiglas Glacier, 214
Pusiano, Lago di, 346

QUARTEN, 205
Quinten, village of, 205, 244
Quinto, village of, 266

RABBI, village of, 435
Rabbi to Meran, by the Ultentnal (§ 37, Rte. G), 439
Rabbiosa torrent, 321
Rabiosa torrent (§ 27, Rte. C), 208
Rabiosa torrent (§ 35, Rte. A), 366
Rabiusa torrent, 302
Ragatz, 206
Ragatz, Glarus to, by the Sernfthal and Sardona Glacier (§ 27, Rte. K), 225
Ragatz, Richenau to, by the Kunkels Pass (§ 27, Rte. N), 229
Rallingen, 64
Ranft, the, 131, 132
Randen, Hoh, 203
Ranzo, village of, 488
Rappen Glacier, 252
Rappenthal, the, 252
Rapperschwyl, town of, 173, 187, 204
Rapperschwyl, Schwyz to, by Einsiedlen (§ 26, Rte. E), 172
Raron, 45
Ratevel, 23

RAU

Rauracorum, Augusta, 29
Räzli Glacier, 48
Realp, hamlet of, 271
Reckingen, 83
Redorda, Val, 306
Reichenau, 211
Reichenau to Elm, by the Segnes Pass (§ 27, Rte. I), 224
Reichenau to Ragatz, by the Kunkels Pass (§ 27, Rte. N), 229
Reichenau to Splügen, by Savien and the Löchliberg Pass (§ 31, Rte. H), 301
Reichenbach, 34
Reichenbach, Thun to (§ 24, Rte. A), 58
Reichenbach, 63
Reichenburg, 187
Reidenbach, 21
Reitbad, 241
Rellsthal, the, 352
Remüs, village of, 363, 393
Remüs, Ischgl to, by the Fimber Joch, 363
Remüs to Mals, by Val d'Uina (§ 37, Rte. N), 446
Rendena, Val, 470, Pieve di Val, 472
Renfen Glacier, 122
Renfer Joch, 125
Rettau, Lake of, 18
Rezzo, Val di, 404
Rhætian Alps, 347
Rhäzuns, castle of, 281
Rhein, Vorder, valley of the, 211
Rhein, the Averser, 379
Rhein, the Medelser, 275
Rheinau, monastery of, 203
Rheineck, 234
Rheinwald, 284
Rheinwald Glacier, 288
Rhine, Falls of the, 202
Rhine, valley of the, Weissbad to the (§ 28, Rte. F), 239
Rhine, Hinterrhein to the source of the (§ 31, Rte. B), 287
Rhone Glacier, 82
Richisau, hamlet of, 179
Richterschwyl, village of, 172, 186
Richterschwyl, Schwyz to, by Rothenthurm (§ 26, Rte. D), 171
Rieder Alp, the, 93
Riedern, village of, 181
Riein, 298
Riemenstalden, village of, 181
Riemenstadenthal, the, 181
Rière torrent, 50
Ringgenberg, the, 60
Ritom, Lago di, 278
Riva, 482
Riva, on the Lake of Garda, Tione to (§ 40, Rte. D), 481
Riva, Lodrone to, by Val Ampola and the Lake of Ledro (§ 40, Rte. E), 482
Riva, Pinzolo to, by the Bocca di Brenta and Molveno (§ 40, Rte. H), 486
Riviera, 268
Roasco torrent, 403
Rochetta, 429
Rocchetta, Val, 475
Rofla, defile of, 284
Romedio, Val, 442
Romond, 25
Rosagella, village of, 280
Rorschach, 233
Rorschach, Winterthur to, by railway (§ 28, Rte. A), 231

SAI

Rorschach to Sargans and Coire, by railway (§ 28, Rte. C), 234
Rorschach to Trogen, Gais, Appenzell, and Weissbad (§ 28, Rte. D), 235
Rösa, La, 404 415.
Rosanna river, 351
Roseg Glacier, excursion from Pontresina to, 396
Rosenlaui Glacier, 66, 122.—baths of, 66
Rosenlaui to Meyringen, by the Urbachthal and Weitsattel (§ 24, Rte. L), 121.
Rosimferner, 434
Rosimthal, 434, 437
Rossa, 292
Rossa, Acqua, 279
Rossa, Vedretta, 427
Rossfall, the, 241
Rossinières, village of, 20
Rothbach Fall, 239
Röthebach, the, 193, 236
Rothenthurm, 171
Rothe Kumm Glacier, 53
Rothe Thal, 17
Rothgrätli, the, 176
Rothsattel, 127
Rothstock Glacier, 176
Roththal, the, 105
Rougemont, or Rothberg, village of, 20
Rovana river, 310, Val, 314, 315
Roveredo, village of, 287
Roveredo, Chiavenna to (§ 33, Rte. E), 326
Roveredo, San Bernardino to, by Val Calanca (§ 31, Rte. C), 292
Rovio, village of, 3 2
Ruäras, village of, 217
Rubi Alp, 222
Rübshausen, 175
Rufredo, Val, 442, village of, 442
Rugen, Klein, 59
Ruis, village of, 213
Ruppleten, 198
Russein Thäler, 220
Russein, Val, 220
Ruti, 235
Rüti, Weissbad to the, by the Kamor, 239

SAANEN, town of, 16, 20
Saanen, Sion to (§ 22, Rte. E), 15
Saanen by Sanetsch Pass, 15
—— by the Gelten Pass, 16
Saanen to Ormond Dessus (§ 22, Rte. F), 18
—— by the Lake of Arnen, 18
—— by Gsteig and the Col de Pillon, 18
—— by Lauenen and the Chrinnen Pass, 18
Sabbia, Val, 461
Sachseln, village of, 131
Sagliains, Val, 357
St. Anton, 351
St. Antönierthal, the, 360
St. Christoph, inn and church of, 351
St. Denis, Châtel, 19
St. Gall, town of, 232
St. Gall, Uznach to (§ 28, Rte. B), 233
St Gall to Altstädten (§ 28, Rte. E), 238
—— by Trogan, 238
—— by Gais, 238
St. Gall, Nesslau to, by Urnäsch (§ 28, Rte. H), 241
St. Gallenkirch, 352
St. Gallenkirch to Klosters, by the Schlappiner Joch, 361

SAI

St. Gallenkirch to Küblis, by the St. Antönier Joch, 361
St. Gothard district (§ 30), 258
St. Johann, Alt, 240
St. Margarethen, 234
St. Moritz, Baths of, 388
St. Moritz, Bevers to, by Val Bever (§ 36, Rte. C), 398
St. Moritzer See, 388
St. Pankraz, village of, 440, 441
St. Peter, 299, 300
Sainte, Val, 26
Salez, 235
Salins, town of, 4
Salo, 474
Salò on the Lake of Garda, Malè to, by Val Rendena and the Lake of Idro (§ 40, Rte. A), 469
Salt, mineral spring of, 431
Salux, village of, 367
Samâden, village of, 389
Samâden, Coire to, by the Julier Pass (§ 35, Rte. A), 365
Samâden, Coire to, by the Albula Pass (§ 35, Rte. C), 370
Samâden to Pontresina (§ 36, Rte. B), 393
Samâden Tirano, by the Bernina Pass (§ 36, Rte. K), 412
Sambuco, Val, 311
Samina Thal, 350
Saminathal to Seewis, pass from, 350
Samnaunthal, the, 364
Sampnoir, Val, 364, 393
Sämtisersee, the, 243
San Bernardino, village of, 284, 285
San Bernardino to Roveredo, by Val Calanca (§ 31, Rte. C), 292
San Carlo, hamlet of (§ 32, Rte. D), 312
San Carlo, (§ 36, Rte. K), 413
San Colombano, village of, 466
San Giacomo, Val di, 321
San Pellegrino, 452
San Valentino, Val di, 472
Sand Alp, Ober, 193
—— Unter, 193
Sandbach, the, 192
Sand Glacier, 195
Sanfleuron châlets, 15
Sanfleuron Glacier, 15
Sanguinera, Val, 465
Santa Catarina to Latsch, by the Passo Cevedale (§ 37, Rte. C), 430
Santa Catarina to Prad (§ 37, Rte. D), 432
Santa Catarina, Ponte di Legno to, by the Gavia Pass (§ 39, Rte. F), 463
Santa Domenica, 292
Santa Maria, village of, 442, 445
Santa Maria, hospice of, 276
Santa Maria, Bormio to (§ 37, Rte. K), 442
Santa Maria Maggiore, 317
Saoseo, Lake of, 416
Sarche, Le, village of, 481
Sargans, village of, 235
Sargans, Glarus to, by the Sernfthal (§ 27, Rte. L), 228
Sargans and Coire, Rorschach to, by railway (§ 28, Rte. C), 234
Sargans, Wyl to, by the Toggenburg (§ 28, Rte. G), 240
Sarnen, Lake of, 131
Sarnen, 131
Sarnen to Engelberg (§ 25, Rte. C), 133
Sarnico, village of, 463

SCH

Sassella, 401
Sassina Val, 443
Sasso, La Madonna del, convent and sanctuary of, 305
Savien Platz, village of, 302
Savierthal, 301
Saviore, Val, 460
Savogno, village of, 383
Sax, village of, 240
Saxer Lücke, 239
Saxeten, village of, 95
Saxetenthal, the, 95
Scala, Lago della, 415
Scale, La, 443
Scalve, Val di, 462
Scanfs, 418
Scanfs, village of, 390
Scanfs, Davos am Platz to, by the Scaletta Pass (§ 35, Rte. G), 376
Scanfs, Davos am Platz to, by the Sertig Pass (§ 35, Rte. H), 378
Scanfs, Bormio to, by the Casana Pass, 418
Scarl, village of, 446
Scarla, Val, 392, 445
Schachen, 128
Schächen, Unter, village of, 177
Schächenthal, the, 177
Schaddorf, 261
Schafloch cavern, 64
Schaffhäusen, town of, 203
Schamserthal, the, 283
Schanfigg, valley of, 373
Scharans, village of, 369
Schergenbach torrent, 364
Schienige Platte, the, 61
Schiersch, village of, 355
Schiersch, Schruns to, 360
Schiersch, Vadans to, 360
Schilzbach torrent, 229
Schindellegi, 172
Schinznach, springs of, 158
Schlans, village of, 222
Schleins, village of, 393
Schleiss, 446
Schlinig, village of, 446
Schlinigthal, the, 446
Schluder Scharte, 435
Schmadri Glacier, 98
Schmadribach, falls of the, 98
Schmelzboden, 372
Schmerikon, 187, 204
Schmue torrent, 223
Schneerose ravine, 196
Schöllinen, gorge of, 263
Schönengrund, 234
Schrattenkalk, 69
Schrätten Alp, 122
Schreckfirn, the, 115
Schreyenbach, fall of the, 192
Schruns, 352
Schruns to Küblis, by the Gampadel Joch (?), 360
Schruns to Küblis, by the Plasseggen Pass, 361
Schruns to Schiersch, 360
Schuls, 390
Schuls to Mals, by Val Scarla (§ 37, Rte. M), 445
Schüpfheim, 128
Schwäg Alp, 242
Schwanau, castle of, 170
Schwanden, 189
Schwarenbach, 36

SCH

Schweiningen, 367
Schwendi, village of, 236
Schwendibach torrent, 237
Schwingfeste, 128
Schwyz, town of, 170
Schwyz, Lucerne to (§ 26, Rte. C), 158
Schwyz to Richterschwyl, by Rothenthurm, (§ 26, Rte. D), 171
Schwyz to Rapperschwyl, by Einsiedlen (§ 26, Rte. E), 172
Schwyz to Glarus, by the Pragel Pass (§ 26, Rte. K), 178
Schwyz, Lachen to, by the Wäggi Thal (§ 26, Rte. N), 183
Schyn, defile of, 366, 369
Sciundrau, Lago, 313
Scudelatte, hamlet of, 342
Sedrun, 217
Seealpsee, 238
Seedorf, village of, 176
Seelisberg, village of, 177
Seewen, village of, 170
Seewis, village of, 212, 298, 355, 360
Seewis, Lüner See to, 360
Seewis, Nenzing to, by the Grosse Furka, 360
Seewis, Nenzing to, by the Kleine Furka, 360
Seewis, Saminathal to, pass from, 360
Seghe, Val delle, 487
Segnes Thal, 212
Segrino, Lago di, 345
Selden, Im, châlets of, 101
Selva, Val, 429
Selva, Val, 469
Sementina, gorge of the, 268, 305
Sempach, 148
Sempach, Lake of, 148
Sengg, 65, 71
Sennhütten of Appenzell, 231
Sense or Singine river, 25, 26
Sentis District (§ 28), 230
Sepey, 9
Serbelloni, Villa, 326
Seriana, Val, 439
Serneus, Baths of, 356
Sernfthal, the, 225
Sevelen, 235
S. Fedele, church of, 340
Sierre, 41
Sierre, Thun to, by Adelboden, and the Strubeleck (§ 23, Rte. D), 46
Signau, village of, 127
Sigriswyl, 64
Sihl river, 159
Sihlbrücke, the, 161
Silberthal, the, 352
Silenen, 262
Silissi, Lake of, 464
Sils, village of, 387
Silser See, 386
Silvaplana, village of, 369, 385
Silvaplaner See, 383, 388
Silvretta Glacier, 358
Simmenthal, Ober, 48
Simplon road, 250
Sinestra, Val, 363
Singine or Sense river, 25, 26
Sins, village of, 393
Sion, 15
Sion, Bex to, by the Col de Cheville (§ 22, Rte. D), 13
Sion to Saanen (§ 22, Rte. E), 15
—— by the Sanetsch Pass 15
—— by the Gelten Pass, 16

STA

Sion, Thun to, or Sierre, by the Rawyl Pass (§ 23, Rte. E), 48
Sionne valley, 18
Sissach station, 31
Sissingen, hamlet of, 156, 182
Sitter river, 232
Soglio, 386
Soja, Val, 300
Soladino, waterfall of, 310
Solda, Val, 338
Sole, Val di, 429
Soleure or Solothurn, town of, 30
Solisbrücke, the, 369
Solothurn or Soleure, town of, 30
Somascona, 277
Someo, 310
Somvix, village of, 215, 292
Somvixerthal, 292
Sonceboz, village of, 30
Sondalo, 404
Sondrio, town of, 402
Sondrio, Casaccia to, by the Muretto Pass (§ 36, Rte. G), 409
Sondrio, Bergamo to, by Val Brembana (§ 38, Rte. B), 450
Sondrio, Edolo to, by Aprica Pass (§ 39, Rte. E), 463
Sonogno, village of, 308
Sörenberg, 127
Sotto, Valle di, 404
Sous-la-Lex, 14
Soybach, the, 431
Sparlotsch, Val, 370
Speicher, village of, 238
Spiez, castle and village of, 63
Spiggengrund, 42
Spiggengrund, the, 96
Spillauer See, 220
Spina Bad, 373
Spinone, Lago di, 462
Spiringen, 177
Spluga, Val di, 405
Splügen, village of, 284, 319
Splügen, Richenau to, by Savien and the Löchliberg Pass (§ 31, Rte. H), 301
Spondinig, 420
Sporeggio, Val, 488
Stabina, Val, 452
Stachelberg, 192
Stachelberg, Altdorf to, by the Klausen Pass (§ 26, Rte. I), 177
Stachelberg, Muotta to, by the Bisithal (§ 26, Rte. M), 182
Stachelberg, Zurich to, by Glarus (§ 27, Rte. A), 185
Stachelberg to Amsteg, by the Clariden Grat (§ 27, Rte. B), 197
Stachelberg, Dissentis to, by the Sand Grat (§ 27, Rte. F), 220
Stachelberg, Ilanz or Dissentis to, by the Kisten Pass (§ 27, Rte. G), 222
Stachelberg, Elm to, by the Richetli Pass (§ 27, Rte. M), 229
Stäfa, village of, 186
Stalvedro, defile of, 266
Stanz, 131, 173
Stanz to Altdorf, by Isenthal (§ 26, Rte. G), 175
Stanz to Altdorf, by Beckenried and the Sonnenberg (§ 26, Rte. H), 176
Stanzerthal, the, 351
Stanzstad, 133
Stanzstad, Meyringen to, by the Melch Thal, (25, Rte. B), 132

STA

Stanzstad to Altdorf, by Engelberg and the Surener Pass (§ 26, Rte. F), 173
Starkenstein, castle of, 240
Starlera, Val, 380
Staübbach, the, 75
Staübibach, waterfall of the, 178
Stechelberg, 98
Stein Alp, 138
Stein Alp to Guttanen, by the Steinlimmi and Furtwang Passes (§ 25, Rte. G), 142
Stein, village of, 241
Steinberg Alp, 98
Steinen Glacier, 255
Steinmänner, 123
Stenico, village of, 481
Stieregg, 69
Stilfs, 424
Stilserthal, 424
Stockgron, 216
Storo, village of, 485
Storo to Toscolano on the Lake of Garda, by Val Vestino (§ 40, Rte. G), 485
Strim Thal, 217, 219
Strima torrent, 217
Stuben, village of, 351
Stulserthal, the, 378
Sufers, 284
Sulden Ferner, 436
Sulden Glacier, 433
Sulden, Laas to, by the Laaserthal, (§ 47, Rte. F), 431
Suldenthal, the, 434
Sulsanna, Val, 377, 378
Sulzberg, Val di, 429
Surkasti, village and castle of, 296
Surpalix, glen of, 218
Surrhein, 215, 292
Sur Sass (about 7, 800′), 446
Sursee, town of, 148
Sursura, Val, 378
Sursura Glacier, 391
Süs, 391
Süs, Maienfeld to, by the Prættigau and the Vereina Pass (§ 34, Rte. D), 355
Süs, Davos and Platz to, by the Fluela Pass (§ 35, Rte. F), 375
Susasca, Val, 376
Süserthal, the, 357
Susine, Val delle, 476
Susten, 41
Suvretta, Val, 398
Swarzwald Glacier, the Lower, 67

TABARETTATHAL, 424
Talleggio, Val, 450
Tamina, the, 207
Tamins, 211
Tanni Alp, 132
Tarasp, hamlet of, 392
Tartavalle, 454
Tasna Val, 363
Tätschbach, cascade of the, 173
Tauffers, 445
Tavanasa, 213
Tavannes, 30
Taverne, 334
Tavetsch, Mompè, 217
Tavetscher Thal, 217
Taveyannaz, 12
Tedesco, Mezzo, 430

TRA

Teglio, 403
Tellina, Val, 400
Tellithal, the, 102
Tells Platte, 156
Téo, Val di, 413
Tenji, Val, 292
Tenniger Bad, 293
Tenno, Lago di, 482
Terri Gebirge, 296
Termine, Val, 280
Terms, or Pazzola, Val, 217
Teufen, village of, 239
Thalkirch, village of, 303
Thalwyl, 186
Thiermatten, 51
Thun, town of, 22, 32
Thun, Vevey to, by the Bulle and the Simmenthal (§ 2, Rte. G), 19
Thun, Bulle to (§ 22, Rte. L), 26
Thun to Kandersteg, by the Kien Thal (§ 23, Rte. B), 41
Thun to Sierre, by Adelboden, and the Strubeleck (§ 23, Rte. E), 47
Thun to Sion, or Sierre, by the Rawyl Pass (§ 23, Rte. F), 48
—— by Zweisimmen, 48
—— by the Diemtigen Thal and Grimmi Pass, 51
—— by Adelboden, 51
Thun to Interlaken and Meyringen, or Reichenbach (§ 24, Rte. A), 58
Thun, Lake of, or Thunersee, 235
Thur, valley of the, 240
Thusis, 281
Thusis to Tiefenkasten (§ 35, Rte. B), 369
Tiarms, Val, or Gämmerthal, 218
Tiarno di Sotto, 483
Tiatscha, Vądret, 358
Tiefenkasten, village of, 367
Tiefenkasten, Thusis to (§ 35, Rte. B), 369
Tine, La, defile of, 20
Tinzen, 367
Tione, village of, 473
Tione to Riva on the Lake of Garda (§ 40, Rte. D), 481
Tione, Pieve di Ledro to (§ 40, Rte. F), 484
Tirano, La Madonna di, sanctuary of, 403
Tirano, town of, 403, 414
Tirano, Samaden to, by the Bernina Pass (§ 36, Rte. K), 412
Tirano, Bergamo to, by Val Seriana (§ 38, Rte. A), 439
Titlis district (§ 25), 129
Tivano, or north wind, 323
Tobel, Maschänzer, 209
—— Scalära, 209
Tobel, Welsch, ravine of, 374
Todi district (§ 27), 184
Todtensee, 81
Toggenburg, the, 240
Toggia, Val, 251
Toma See, 219
Torno, 329
Tosa Fall, 249
Tosa river, 249
Toscolano, village of, 486
Toscolano on the Lake of Garda, Storo to, by Val Vestino (§ 40, Rte. G), 485
Toscolano, Val, 486
Töss river, 204
Trabucchello, village of, 450
Trachsellauenen, hamlet of, 98
Traffiume, 315

Trafoi, village of, 423
Trafoi, Malè to, by the Suldenthal (§ 37, Rte. F), 435
Trafoiferner, Unter, 424
—— Hinter, 424
Traona, Val, 401
Trasquera, village of, 256
Travers, village of, 5
Traversagna, Val, 337
Treib, hamlet of, 177
Tremezzo, village of, 327
Trento, Bormio to, by Val Furva and Val di Sole (§ 37, Rte. B), 425
Trepalle, village of, 417
Tresa, Ponte, village of, 338
Tresa river, 338
Trescorre, Baths of, 449
Tresenda, 403
Trevisio, village of, 402
Trins, 212
Trogen, village of, 236, 238
Trogen, Rorschach to (§ 28, Rte. D), 235
Trompia, Val, 466
Trons, village of, 214
Trons to Olivone, by the Greina Pass (§ 31, Rte. D), 292
Trüb See, 135
Trübbach, 235
Trubschachen, 127
Trugberg Glacier, 88
Trümmletenthal, the, 72
Trupchum, Val, 418
Trützi-see, 83
Tschep, Piz (9,656′), 211
Tschiertschen, village of, 374
Tschierva, Vadret da, 396
Tschingel Glacier, 100
Tuoi, Val, 362
Tuors, Val, 370, 378
Turtman, 41, 45
Turtman, Kandersteg to, by the Lötschen Pass (§ 23, Rte. C), 44
Turtman, Lauterbrunnen to, by the Lötschenthal (§ 24, Rte. G), 100

UESCHINENTHAL, 36, 53
Ufenau, island of, 186
Ufiern, 278
Uina, Val d', 393, 446
Ulrichen, 83, 247
Ultinum, the Roman, 31
Ultenthal, the, 438
Unspunnen, 77
Unteralpthal, the, 274
Unterseen, 58
Unterterzen, 205
Unterthal, 228
Urbachthal, the, 78, 121
Urezas, Val, 363
Urnäsch, village of, 241
Urner Alp, 123
Urner See, 153
Urner Loch, 264
Urnerboden, 178
Urkantone, the three, 268
Urschai, Val, 363
Urserenthal, 264
Uster, town of, 204
Uznach, 233
Uznach, town of, 204
Uznach to St. Gall (§ 28, Rte. B), 233

VADANS, 352
Vadans to Schiersch, 360
Vaduz, village of, 354
Valbella, hamlet of, 292, 366
Valbona, mine of, 454
Valcalda torrent, 361
Valcava, 445
Valendas, 212
Valens, hamlet of, 207
Vallatsch, glen of, 300
Valleve, village of, 451
Valschauer torrent, 440
Valserthal, the, 298
Vanescha, Val, 297
Vanescha, hamlet of, 297
Varenna, 331
Varenna to Introbbio (§ 38, Rte. F), 457
Varese, town of, 343
Varonne torrent, 456
Vättis, 227
Vatzer See, 366
Vatzerol, 366
Vedasca, Val, 305
Veltlin, 400
Venezia, Malga di, 475
Venoge river, 8
Verdasio, 316
Vergeletto, village of, 315
Vermiglio, Val, 449
Vernelathal, the, 358
Vernex, 8
Verrières, Les, village of, 5
Versam, 212
Versam, village of, 302
Verva, Val di, 404, 416
Vevey, town of, 8
Vevey to Thun by the Bulle and the Simmenthal (§ 2, Rte. G), 19
Verzasca, Val, 308
Vestino, Val, 485
Vestone in Val Sabbia, Brescia to (§ 39, Rte. K), 467
Vevey, Château d'Oex to, on foot or horseback (§ 22, Rte. H), 22
Vevey, by the Col de Chaude, 23
Vevey to Fribourg and Berne (§ 22, Rte. I), 23
Vezza, 460
Vico Soprano, Morbegno to, by the Passo di Zocca, 407
Vico Soprano, village of, 386
Vierwaldstätter See, or Lake of Lucerne, 153
Viesch Glacier, 89
Viesch, 83
Viesch to Brieg, by the Æggischhorn and Bell Alp (§ 24, Rte. D), 84
Viesch to Formazza (Andermatten), by the Albrun Pass and Lebendu (§ 29, Rte. C), 251
Viesch to Premia, by the Binnenthal (§ 29 Rte. D), 253
Viesch to Isella, by the Ritter Pass (§ 29, Rte. E), 254
Vigezzo, Val, 316
Vignitzthal, the, 353, 364
Vignone, Val, 284
Villa, 396, 403
Villeneuve, 8
Vindonissa, Roman settlement of, 158
Viola, Val, 415, 416
Visp, 45
Visp, Kandersteg to (§ 23, Rte. C), 44
Vitelli, Val di, 432—Vedretta di, 432
Vitznau, village of, 167
Vitznau, descent from the Rigi to, 167

VÖL

Völlan, 441
Vorauen, 179
Vorarlberg, province of, 351
Vrin, 296

WÄGGI THAL, the, 183
Waggithal, Hinter, village of, 183
Waggithal, Vorder, village of, 183
Wäggis, 154, 165
Wäggis, descent from the Rigi to, 165
Wald, 236
Waldibalm, 199
Waldnacht Alp, 175
Waldshut, 202
Waldstatt, 234
Wallburga, St., village of, 440
Wallenstadt, Lake of, 204—town of, 205
Wallenstadt, Wildhaus to, by the Churfirsten (§ 28, Rte. M), 246
Wallgau, 350
Wallisellen, 204
Walserthal, 351
Walzenhausen, 234
Wändenschwyl, town of, 186
Wasen, 138
Wasen, Meyringen to, by the Susten Pass (§ 25, Rte. E), 137
Wasserleiter, the, of the Valais, 50
Wauwyl, 147
Wauwyler See, 147
Weissbach, torrent, 237
Weissbad, 236
Weissbad, Rorschach to (§ 28, Rte. D), 235
Weissbad to the valley of the Rhine (§ 28, Rte. F), 239
Weissbad, Nesslau to (§ 28, Rte. I), 242
Weissenburg, 21
—— Baths of, 21
Weisstannen, village of, 228
Weisstannenthal, the, 228
Welsch language, 424
'Welt, End der,' 438
Wenden Glacier, 137
Wenderberg, 241
Wengern Alp, 72, 73
Wesen, village of, 187, 204
Wesen, Nesslau to (§ 28, Rte. K), 242
Wettereismeer, the, 121
Wettingen, abbey of, 159
Wichlen Glacier, 223
Wiesen, 372
Wildbad, Wildhaus to, by the Kray Alp (§ 28, Rte. L), 243
Wildegg, 157
Wilderschwyl, 77
Wildhaus, village of, 240
Wildhaus to Wildbad, by the Kray Alp (§ 28, Rte. L), 243
Wildhaus to Wallenstadt, by the Churfirsten (§ 28, Rte. M), 246

WYL

Wildkirchli, the, 237
Wildstrubel Glacier, 53
Wimmis, village of, 33
Windegg, the, 140
Windisch, 158
Winkel, 132
Winterthur, 204, 231
Winterthur to Rorschach, by railway (§ 28, Rte. A), 231
Wirthshaus, Ofen, 444
Wissenstein, 371
Woert, castle of, 203
Wohlhausen, 128
Wolfenschiessen, 173, 174
Worb, village of, 127
Worms, 421
Wunderbrunnen, 135
Wyl, town of, 232, 240
Wyl to Sargans, by the Toggenburg (§ 28, Rte. G), 240
Wyler, village of, 34, 61, 71
Wyttenwasser Glacier, 271

YVERDUN, town of, 7

ZAIFERNER, 434
Zapport Alp, 288
Zapport Glacier, 288
Zavreila, hamlet of, 299
Zavreilthal, village of, 299
Zebru, Val di, 425
Zernetz, village of, 391
Zernetz, Bormio to, 418
Zernetz to Mals, by the Ofen Pass and Val Mustair (§ 37, Rte. L), 444
Zerzerthal, the, 446
Zgraggenthal, 262
Zillis, village of, 283
Zizers, 209
Zofingen, town of, 148
Zogno, 450
Zufall Ferner, 437
Zufrid Ferner, or Gramser Ferner, 439
Zug, Lake of, 162
Zug, town of, 161
Zuklo, 482
Zura, Val, 277
Zurich, Lake of, 161
Zurich, town of, 159
Zurich to Stachelberg, by Glarus (§ 27, Rte. A), 185
Zutz, village of, 390
Zweilütschinen, 76, 96
Zweisimmen, 20, 48
Zwing Uri, castle of, 262

LONDON: PRINTED BY
SPOTTISWOODE AND CO., NEW-STREET SQUARE
AND PARLIAMENT STREET

TO TRAVELLERS IN SWITZERLAND, THE TYROL, AND THE EASTERN ALPS.

THE NEW ALPINE GUIDES.

Lately published,

THE

ALPINE GUIDE.

By JOHN BALL, M.R.I.A. F.L.S.

Late President of the Alpine Club.

In THREE PARTS *or* VOLUMES, post 8vo. with Maps, Panoramas of Summits, and other Illustrations:—

GUIDE TO THE WESTERN ALPS,

Mont Blanc, Monte Rosa, &c. including the whole range of the Alps of Piedmont, Dauphiné, and Savoy, from Nice to the Pass of the Simplon, price 6*s.* 6*d.*

GUIDE TO THE CENTRAL ALPS,

Including the Burnese Oberland, with Lombardy and the adjoining portion of the Tyrol, price 7*s.* 6*d.*

GUIDE TO THE EASTERN ALPS,

Including the Salzburg and Central Tyrolese Chains, the Styrian Alps, and the Terglou district from the Valley of the Drave to the Adriatic, price 10*s.* 6*d.*

INTRODUCTION on ALPINE TRAVELLING in general and on the Geology of the Alps, price 1*s.* Each of the Three Volumes *or* Parts of the *Alpine Guide* may be had with this INTRODUCTION prefixed, price 1*s.* extra.

'A sort of Alpine MURRAY, with maps and minute instructions almost sufficient to enable the pedestrian to make his way without a guide. But whether alone or attended, he should not visit the Alps without this excellent assistant in his pocket.' *The* FIELD.

'As a whole, the Guide Books of this series appear to us to be the most complete that have ever fallen into our hands. The information concerning routes, hotels, modes of conveyance, and all the thousand-and-one points on which a stranger needs guidance, so far as we have been able to test it, is wonderfully accurate, and the advice tendered highly judicious. The topographical and geographical descriptions are of great value, and the hints interspersed for the assistance of the scientific explorer add much to the worth of these volumes, which is still further enhanced by the insertion of admirable maps, lists of the best works extant relating to the topography, physical geography, geology, &c., of the various Alpine regions. The labour involved in the preparation of handbook guides so perfect to countries little explored by tourists must be very considerable; and the skill with which Mr. BALL has fused his materials, compressing into a small compass much of the information of which he possesses enormous stores, added to the pleasant style in which he writes even on points of minor interest, places his series entirely beyond the need of any praise of ours.' BRITISH QUARTERLY REVIEW.

'Mr. BALL is specially the mountaineer's guide. He abbreviates the accounts of various ardent climbers, and in a column or two contrives to convey considerable information to those who may meditate any of the *grandes courses*, as the guides call them. This, we think, is the prominent characteristic of the present Alpine Guide. In it we have the pith of the series of volumes of the Alpine Club men known as *Peaks and Passes*, or, if not the entire pith, sections of the pith in particular parts. The compiler sometimes adds notes of his own excursions, and being well acquainted with what has been written, and what has been effected by Alpine volunteers, he succeeds in bringing together, compactly, more directions and suggestions respecting arduous excursions than have yet appeared in any one volume of the kind. . . . It is no slight gain to have the results of different ascents and passages over passes and glaciers compendiously summarised, and rightly distributed in their proper places.' ATHENÆUM.

London: LONGMANS and CO. Paternoster Row.

BALL'S ALPINE GUIDES.

LATEST EDITIONS, THOROUGHLY REVISED.

The Alpine Guide. By JOHN BALL, M.R.I.A. late President of the Alpine Club. Post 8vo. with Maps and other Illustrations, in Three Volumes, as follows:—

The Guide to the Eastern Alps, price 10*s.* 6*d.*

The Guide to the Western Alps, including Mont Blanc, Monte Rosa, Zermatt, &c. price 6*s.* 6*d.*

Guide to the Central Alps, including all the Oberland District, price 7*s.* 6*d.*

Introduction on Alpine Travelling in general, and on the Geology of the Alps, price 1*s.* Either of the Three Volumes or Parts of the *Alpine Guide* may be had with this INTRODUCTION prefixed, price 1*s.* extra.

To be had also, for the convenience of Travellers visiting particular Districts, in Ten Sections, as follows, each complete in itself, with General and Special Maps:—

The **BERNESE OBERLAND**, price 2*s.* 6*d.*

MONT BLANC and **MONTE ROSA**, price 2*s.* 6*d.*

DAUPHINÉ and **PIEDMONT**, from Nice to the Little St. Bernard, price 2*s.* 6*d.*

NORTH SWITZERLAND, including the Righi, Zurich, and Lucerne, price 2*s.* 6*d.*

The **ST. GOTHARD PASS** and the **ITALIAN LAKES**, price 2*s.* 6*d.*

EAST SWITZERLAND, including the Engadine and the Lombard Valleys, price 2*s.* 6*d.*

NORTH TYROL, the Bavarian and Salzburg Alps, price 2*s.* 6*d.*

CENTRAL TYROL, including the Gross Glockner, price 2*s.* 6*d.*

SOUTH TYROL and **VENETIAN** or **DOLOMITE ALPS**, price 2*s.* 6*d.*

The **STYRIAN, CARNIC,** and **JULIAN ALPS**, price 2*s.* 6*d.*

London: LONGMANS and CO. Paternoster Row.

LIBRARY OF CONGRESS.

Chap. .....

Shelf .....

UNITED STATES OF AMERICA.

LIBRARY OF CONGRESS
0 020 585 754 0